

Evaluation of the Cost Impact of 2021 ICC Prescriptive Code Changes

RINKER-CR-2021-101

Interim Report

26 February 2021

Submitted to

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TABLE OF CONTENTS

	<u>page</u>
Overview	1
Scope of Work	2
Progress to Date	4
MEP Code Changes Cost Impact	4
NEC Changes Cost Impact	5
IBC-Fire Safety Changes Cost Impact	6
Structural Code Changes Cost Impact	6
APPENDIX A - Table 1. 2021 IBC MEP Changes Cost Impact	7
APPENDIX B - Table 2. 2021 IEBC Mechanical Changes Cost Impact	25
APPENDIX C - Table 3. 2021 IFGC Changes Cost Impact	56
APPENDIX D - Table 4. 2021 IMC Changes Cost Impact	65
APPENDIX E - Table 5. 2021 IPC Changes Cost Impact	176
APPENDIX F - Table 6. 2021 IRC Mechanical Changes Cost Impact	292
APPENDIX G - Table 7. 2021 IRC Plumbing Changes Cost Impact	302
APPENDIX H - Table 8. 2020 National Electrical Code Summary	305
APPENDIX I - Table 9. Fire Protection and Life Safety Change Cost Impact	386
APPENDIX J - Table 10. 2021 IBC Structural Changes Cost Impact	416
APPENDIX K - Table 11. 2021 IRC Structural Changes Cost Impact	505
APPENDIX L – DISCLAIMER - Probable Construction Costs Opinions	560

Overview

This research provides an assessment of the potential cost impacts of the 2021 I-Code changes to the 2018 International Building Codes as incorporated in 2021 Florida Building Code (effective December 31, 2020) by identifying those code changes/provisions that are prescriptive in nature and have the potential of adding cost to construction and by estimating the costs of the rest of the code changes using good engineering judgment and feedback from general contractors and consulting. A standard set of baseline residential and commercial building designs are modeled using building information modeling (BIM) and are used to produce cost estimates and extract the cost impact of code changes. Figure 1 shows the general process used to conduct this research.

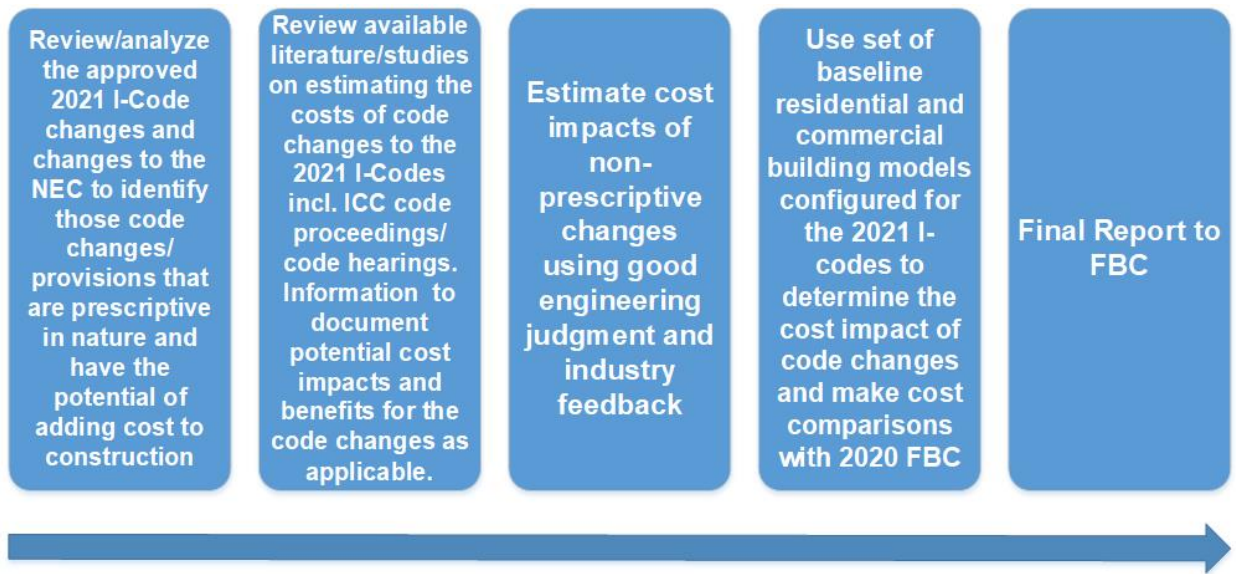


Figure 1. Research Plan

If any of the information gathered is seen as providing clear direction for one or more code recommendations, the recommendation(s) will also be written up and presented to the Commission. Effort will be made to provide a preliminary draft report by 26 February 2021.

Scope of Work

Task

- a. RS shall review/analyze the approved 2021 I-Code changes and changes to the NEC, as listed in Section 2, to identify those code changes/provisions that are prescriptive in nature and that have the potential of adding cost to construction.
- b. The listed consultants shall participate in this process to assist the research team with the specifics of the design changes and their cost impacts as follows:
 - Koffel Associates shall conduct a review/analysis of non-structural fire protection and life safety requirements in IBC Chapter 3 through Chapter 10. This review shall be limited to applicable criteria affecting the five (5) different commercial building scenarios used for the 2018 I-Codes plus Florida Specific Changes (2020 FBC) (Reference – RINKER-CR-2016-101 Final Report). Koffel Associates shall also analyze means of egress and fire prevention for the one-story and two-story homes of the 2021 IRC. In addition, Koffel Associates shall provide the cost for the prescriptive code changes and their qualitative benefits.
 - AEI shall have primary responsibility in evaluating the applicable mechanical, electrical, and plumbing (MEP) related changes that have occurred between the 2018 and 2021 I-Codes, as they relate to the seven building types: 1) Small elementary school; 2) Stand-alone retail building; 3) Small hotel; 4) Small office building; 5) High-rise apartment; 6) one-story house on slab foundation; 7) 2-story house on slab foundation.
 - AEI shall also provide the cost for the prescriptive changes and their qualitative benefit.
- c. RS shall review available literature/studies on the subject of estimating the costs of the changes to the 2021 I-Codes including the International Code Council's code proceedings/code hearing transcripts. Information gathered from this task shall be used to document potential cost impacts and benefits for the code changes identified in Item 4(a) and as applicable.
 - In addition to the ICC code proceedings/code hearing transcripts, cost databases such as RS's Means Cost Works, RS's Means Building Construction Cost Data, and AEI's and Koffel Associates' specific proprietary databases shall be used to estimate the potential cost impact of the applicable code changes.

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- d. RS shall estimate the construction cost impacts of those provisions that are not covered under Section 2 using good engineering judgment and feedback from general contractors and consulting engineers. The listed consultants shall assist the research team with the cost estimates for these changes.
- e. RS shall use the set of baseline residential and commercial building designs configured for the 2021 I-codes to determine the cost impact of code changes. RS shall configure these buildings using the buildings listed below which were used to estimate the cost impacts of the 2018 I-Code changes and Florida-specific amendments to the Florida Building Code, 6th Edition, (2017):
 - o For the purposes of this study the seven buildings include five commercial buildings: 1) Small elementary school; 2) Stand-alone retail building; 3) Small hotel; 4) Small office building; 5) High-rise apartment 6) one-story house on slab foundation; (7) 2 story house on slab foundation.
- f. RS shall use building information modeling (BIM) tools developed for the 2018 I-Codes (as amended via the Florida Building Code, 7th Edition (2020) and 2021 I-Codes) to produce:
 - o A schedule of material quantities (exported to MS Excel).
 - o Architectural 3D view and walk-through.
 - o Isolated structural 3D view and walk-through.
 - o Isolated mechanical, electrical, and plumbing (MEP)/mechanical, electrical, plumbing, and fire (MEPF) 3D view and walk-through.
- g. RS shall use the information developed by Item 4(f) and cost databases to produce cost estimates and extract cost impact of changes on the reference houses and commercial buildings. Sources of cost data shall include RS Means Cost Data, distributors' or big box retailers' websites, and building contractors. Cost estimates of the code changes that do not directly apply to the selected reference houses shall be listed separately and shall be added or subtracted from the aggregated costs for these reference houses.

Progress to Date

Work completed on the project at this point includes contracting subcontractors, background research and developing tables documenting code changes, benefits and cost. Figure 2 highlights research tasks that have been completed or are in progress at the compilation of this interim report.

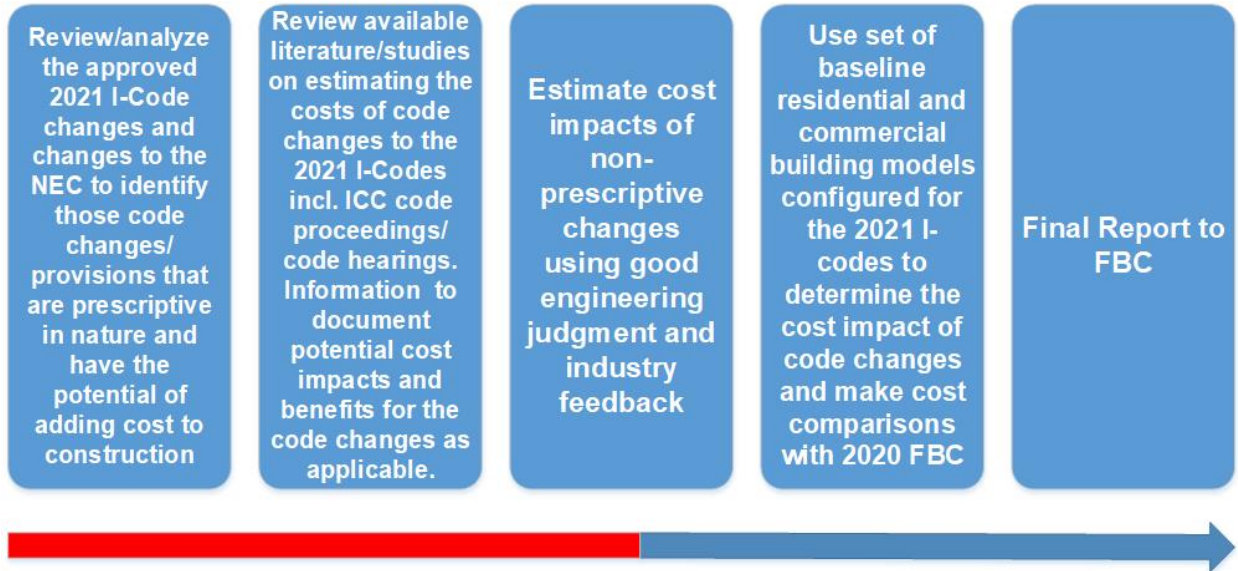


Figure 2. Research progress to date.

Task a: RS shall review/analyze the approved 2021 I-Code changes and changes to the NEC, as listed in Section 2, to identify those code changes/provisions that are prescriptive in nature and that have the potential of adding cost to construction.

MEP Code Changes Cost Impact

Affiliated Engineers SE Inc. (AEI) has undertaken a study aimed at evaluating the cost impact that will result from the state of Florida’s adoption of the 2021 Edition of the International Building Code (IBC). AEI’s primary responsibility resided in evaluating the applicable MEP related changes that have occurred between the 2018 Edition and the 2021 Edition of the I-Codes and their cost impact and benefit.

Preliminary Report of Findings

1. Of the 2021 I-Codes reviewed with respect to mechanical, electrical and plumbing (MEP) systems.
2. A significant proportion of code changes across all I-Codes offer revised language for clarity and consistency.
3. The IMC featured several code changes whereby product standards tables have been updated to reflect those most current.
4. Overall trends in the commercial sector point towards the specification of mechanical and electrical equipment with more superior efficiency ratings, the addition of control

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points and/or revision of sequences and the further clarification of existing code language.

5. IBC (E121-18), which offers clarification while amending the list of Electric Vehicle charging station, parking and passenger loading facilities, and motor vehicle related facilities, was noteworthy in that it reflects current trends towards accommodating for the increased presence of electric vehicles.

The supporting appendices Tables 1 - 7 (APPENDIX A - G) provide further detail and elaboration on the above-listed key observations.

NEC Changes Cost Impact

NEC Changes Cost Impact

A review of the changes to the 2020 National Electric Code (NEC) was completed by examining each change and the corresponding committee notes. Where the changes were deemed to have a cost impact on construction a value was determined by considering the change between the 2020 and 2017 code versions. Material price differentials were based on retail prices and the wages were based on the prevailing wage reports of the U.S. Department of Labor.

Findings

Many of the changes to the code were due to editorial changes to improve readability and style consistency. Many others were made so that the NEC rules align with other codes and standards. Some of changes impacted large portions of the code. These include:

- NEC now covers the export of power from electric vehicles to premises wiring to permit bi-directional power flow between electric vehicles and premises wiring.
- Exterior emergency disconnects to improve safety for one and two family dwellings.
- Updated load calculation methods to reflect changes in energy efficiency
- Requires surge protective devices for all dwellings.
- Expanded the usage of GFCIs

Four new articles were introduced to adjust to current trends. Although these will help to improve safety, a cost assessment was difficult to ascertain.

- 242 - Overvoltage Protection
 - Relocates Articles 280 and 285 into new Article 242 to improve usability of the code.
- 311 - Medium Voltage Conductors and Cables
 - Consolidation of the medium voltage requirements of Articles 310 and 328 into new Article 311 to improve usability of the code.
- 337 - Type P Cable
 - Type P cable is a marine shipboard cable suitable for petrochemical applications due to its flexibility and rugged construction.
- 805 – Communication Circuits
 - Combine common elements of 800, 820, 840, and 840 into a new general article.

Table 8 (APPENDIX H) provides further detail and elaboration on the cost impact observations.

International Building Code (IBC-FPC) Changes Cost Impact

Koffel Associates, Inc. has undertaken a study aimed at evaluating the cost impact that will result from the state of Florida's adoption of the 2021 Edition of the International Building Code (IBC).

Preliminary Report of Findings

Note that all code requirements that have been added associated with heavy timber requirements are noted as no cost impact, as those requirements did not previously exist to compare against. Depending on the use of heavy timber construction, this may increase or decrease cost.

For the IBC changes that reference other ICC codes or NFPA 1, 70, or 101, a cursory review of the respective ICC Code, or the aforementioned NFPA Code or Standard section that is referenced by the IBC change was reviewed for the degree to which it affects the cost impact to the five buildings considered as part of this study. Such referenced Code and Standard changes imposing a significant cost impact are included in summary Table 9 (APPENDIX I).

Structural Code Changes Cost Impact

The RS has undertaken a study aimed at evaluating the cost impact that will result from the state of Florida's adoption of the 2021 Edition of the International Building Code (IBC). RS took primary responsibility in evaluating the applicable Structural Engineering related changes that have occurred between the 2018 Edition and the 2021 Edition of the IBC and IRC.

Preliminary Report of Findings

There were very few prescriptive cost impact changes and many were related to seismic requirements.

Tables 10-11 (Appendix J - K) provide further detail and elaboration on the above-listed key observations.

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APPENDIX A

Table 1. 2021 IBC MEP Changes Cost Impact						
CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
E15-18 Part I	<p>Modify as follows:</p> <p>1010.1.10 Panic and fire exit hardware. Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an <i>occupant load</i> of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than <i>panic hardware</i> or <i>fire exit hardware</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. A main exit of a Group A occupancy shall be permitted to have locking devices in accordance with Section 1010.1.9.4, Item 2. 2. Doors provided with panic hardware or fire exit hardware and serving a Group A or E occupancy shall be permitted to be electrically locked in accordance with Section 1010.1.9.9 or 1010.1.9.10. <p>Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices or control devices with exit or <i>exit access</i> doors, shall be equipped with <i>panic hardware</i> or <i>fire exit hardware</i>. The doors shall swing in the direction of egress travel.</p> <p><u>Refrigeration machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two exits or exit access doorways that swing in the direction of egress travel and are equipped with panic hardware or fire exit hardware.</u></p>		X			Necessary addition for clarification
E15-18 Part II	<p>1105.10 [BE] Means of egress. Machinery rooms larger than 1,000 square feet (93 m²) shall have not less than two exits or exit access doorways. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room.</p> <p><u>All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in exit access travel distance is permitted in accordance with Section 1017.1. Exit and exit access doorways shall swing in the direction of egress travel and shall be equipped with panic hardware, regardless of the occupant load served. Exit and exit access doorways shall be tight fitting and self-closing.</u></p>			X	\$4.00 per room sqft.	Necessary Addition
E27-18	<p>1008.2.1 Illumination level under normal power. The means of egress illumination level shall be not less than 1 footcandle (11 lux) at the walking surface. <u>Along exit access stairways, exit stairways and at their required landings, the illumination level shall not be less than 10 footcandles at the walking surface when the stairway is in use.</u></p>			X	\$1.00 per room sqft.	Clarification

Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances by one of the following methods provided that the required illumination is automatically restored upon activation of a premises' fire alarm system:</p> <ol style="list-style-type: none"> Externally illuminated walking surfaces shall be permitted to be illuminated to not less than 0.2 footcandle (2.15 lux). Steps, landings and the sides of ramps shall be permitted to be marked with self-luminous materials in accordance with Sections 1025.2.1, 1025.2.2 and 1025.2.4 by systems listed in accordance with UL 1994. <p>1008.2.1 Illumination level under normal power. The means of egress illumination level shall be not less than 1 footcandle (11 lux) at the walking surface. <u>Along exit access stairways, exit stairways and at their required landings, the illumination level shall not be less than 10 footcandles at the walking surface when the stairway is in use.</u></p> <p>Exception: For auditoriums, theaters, concert or opera halls and similar assembly occupancies, the illumination at the walking surface is permitted to be reduced during performances by one of the following methods provided that the required illumination is automatically restored upon activation of a premises' fire alarm system:</p> <ol style="list-style-type: none"> Externally illuminated walking surfaces shall be permitted to be illuminated to not less than 0.2 footcandle (2.15 lux). Steps, landings and the sides of ramps shall be permitted to be marked with self-luminous materials in accordance with Sections 1025.2.1, 1025.2.2 and 1025.2.4 by systems listed in accordance with UL 1994. 					
E28-18	<p>412.7.3 Means of egress. The means of egress from heliports and helistops shall comply with the provisions of Chapter 10. Landing areas located on buildings or structures shall have two or more means of egress- exits or access to exits. For landing areas less than 60 feet (18 288 mm) in length or less than 2,000 square feet (186 m²) in area, the second means of egress is permitted to be a fire escape, alternating tread device or ladder leading to the floor below.</p> <p>1008.3.1 General. In the event of power supply failure in rooms and spaces that require two or more means of egress- exits or access to exits, an emergency electrical system shall automatically illuminate all of the following areas:</p> <ol style="list-style-type: none"> Aisles. Corridors. 		X			Clarification
			X			Clarification

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Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>3. Exit access stairways and ramps.</p> <p>1008.3.2 Buildings. In the event of power supply failure in buildings that require two or more means of egress exits or <u>access to exits</u>, an emergency electrical system shall automatically illuminate all of the following areas:</p> <ol style="list-style-type: none"> 1. Interior exit access stairways and ramps. 2. Interior and exterior exit stairways and ramps. 3. Exit passageways. 4. Vestibules and areas on the level of discharge used for exit discharge in accordance with Section 1028.1. 5. Exterior landings as required by Section 1010.1.6 for exit doorways that lead directly to the exit discharge. <p>1010.1.4.5 Security grilles. In Groups B, F, M and S, horizontal sliding or vertical security grilles are permitted at the main exit and shall be openable from the inside without the use of a key or special knowledge or effort during periods that the space is occupied. The grilles shall remain secured in the full-open position during the period of occupancy by the general public. Where two or more means of egress exits or <u>access to exits</u> are required, not more than one-half of the exits or exit access doorways shall be equipped with horizontal sliding or vertical security grilles.</p>					
E30-18	<p>1009.2.1 Elevators required. In buildings where a required accessible floor <u>or occupied roof</u> is four or more stories above or below a level of exit discharge, not less than one required accessible means of egress shall be an elevator complying with Section 1009.4.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the levels of exit discharge. 2. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Section 1012. 		X			Clarification
E33-18	<p>1009.6.2 Stairway or elevator access. Every required area of refuge shall have direct access to a stairway complying with Sections 1009.3 and 1023 or an elevator complying with Section 1009.4.</p> <p>Exception: <u>An interior area of refuge at the level of exit discharge that provides direct access to an exterior exit door.</u></p>			X	\$4.00 per room sqft.	Clarifies and amends list of size for areas of refuge, exterior areas of assisted rescue, and lobbies

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Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
E34-18	<p>1009.6.3 Size. Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 48 <u>52</u> inches (762 mm by 1219 <u>1320</u> mm) for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge. Such wheelchair spaces shall not reduce the means of egress minimum width or required capacity. Access to any of the required wheelchair spaces in an area of refuge shall not be obstructed by more than one adjoining wheelchair space.</p> <p>1109.2.1.6 Clear floor space. Where doors swing into a family or assisted-use toilet or bathing room, a clear floor space not less than 30 inches by 48 inches (762 mm by 1219 mm) shall be provided, within the room, beyond the area of the door swing.</p> <p>3008.6.4 Lobby size. Each occupant evacuation elevator lobby shall have minimum floor area as follows:</p> <ol style="list-style-type: none"> 1. The occupant evacuation elevator lobby floor area shall accommodate, at 3 square feet (0.28 m²) per person, not less than 25 percent of the occupant load of the floor area served by the lobby. 2. The occupant evacuation elevator lobby floor area shall accommodate one wheelchair space of 30 inches by 48 <u>52</u> inches (760 mm by 1220 <u>1320</u> mm) for each 50 persons, or portion thereof, of the occupant load of the floor area served by the lobby. <p>Exception: The size of lobbies serving multiple banks of elevators shall have the minimum floor area approved on an individual basis and shall be consistent with the building's fire safety and evacuation plan.</p>		X			Clarification
E61-18	<p>1010.1.9.9 Sensor release of electrically locked egress doors. Sensor release of electric locking systems shall be permitted on doors located in the means of egress in any occupancy except Group H where installed and operated in accordance with all of the following criteria:</p> <ol style="list-style-type: none"> 1. The sensor shall be installed on the egress side, arranged to detect an occupant approaching the doors, and shall cause the electric locking system to unlock. 2. The electric locks shall be arranged to unlock by a signal from or loss of power to the sensor. 3. Loss of power to the lock or locking system shall automatically unlock the electric locks. 4. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a 		X			Clarification

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Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>sign that reads "PUSH TO EXIT." When operated, the manual unlocking device located 40 inches to 48 inches (1016 mm to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the electric lock-independent of other electronics and the electric lock shall remain unlocked for not less than 30 seconds.</p> <p>5. Activation of the building fire alarm system, where provided, shall automatically unlock the electric lock, and the electric lock shall remain unlocked until the fire alarm system has been reset.</p> <p>6. Activation of the building automatic sprinkler system or fire detection system, where provided, shall automatically unlock the electric lock. The electric lock shall remain unlocked until the fire alarm system has been reset.</p> <p>7. <u>Emergency lighting shall be provided on the egress side of the door.</u></p> <p>8. The door locking system units shall be listed in accordance with UL 294.</p>					
E64-18	<p>1010.1.10.1 Rooms with electrical equipment. Exit or exit access doors serving transformer vaults, rooms designated for batteries or energy storage systems, or modular data centers shall be equipped with panic hardware or fire exit hardware. Where rooms contain <u>Rooms containing electrical rooms with</u> equipment rated 800 amperes or more <u>and</u> that contain overcurrent devices, switching devices or control devices and where the exit or exit access door is less than 25 feet from the equipment working space <u>as required by NFPA 70, shall be equipped with</u> such doors shall not be provided with a latch or lock other than panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.</p>		X			Clarification
E92-18	<p>1020.5 Air movement in corridors. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts.</p> <p>Exceptions:</p> <p>1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor.</p>			X	Minimal	Clarifies and amends the list of Electric Vehicle charging station, parking and passenger loading facilities, and

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Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited. 3. Where located within tenant spaces of 1,000 square feet (93 m ²) or less in area, utilization of corridors for conveying return air is permitted. 4. Transfer air movement required to maintain pressurization difference within health care facilities in accordance with Section 407.1 of the International Mechanical Code. <u>ASHRAE 170.</u>					motor vehicle related facilities
E121-18	<p style="text-align: center;">SECTION 202 DEFINITIONS</p> <p><u>ELECTRIC VEHICLE CHARGING STATION.</u> <u>One or more vehicle spaces served by an electric vehicle charging system.</u></p> <p><u>406.2.7 Electric vehicle charging stations systems.</u> Where provided, electric vehicle charging stations systems shall be installed in accordance with NFPA 70. Electric vehicle charging system equipment shall be listed and labeled in accordance with UL 2202. Electric vehicle supply equipment shall be listed and labeled in accordance with UL 2594. Accessibility to electric vehicle charging stations shall be provided in accordance with Chapter 11.</p> <p style="text-align: center;">SECTION 1106 PARKING AND PASSENGER LOADING FACILITIES</p> <p><u>1106.1 General.</u> <u>Parking shall comply with Section 1106.2 through 1106.7. Passenger loading zones shall comply with Section 1106.8.</u></p> <p style="text-align: center;">SECTION 1107 MOTOR VEHICLE RELATED FACILITIES</p> <p><u>1107.1 General.</u> <u>Electrical vehicle charging stations shall comply with Section 1107.2. Fuel-dispensing systems shall comply with Section 1107.3.</u></p> <p><u>1107.2 Electrical vehicle charging stations.</u> <u>Electrical vehicle charging stations shall comply with Sections 1107.2.1 and 1107.2.2.</u> <u>Exception:</u> <u>Electrical vehicle charging stations provided to serve Groups R-2, R-3 and R-4 occupancies are not required to comply with this section.</u></p> <p><u>1107.2.1 Number of accessible vehicle spaces.</u> <u>At least five percent (5%) of vehicle spaces on the site served by electrical vehicle charging systems but, not fewer than one for each type of electric vehicle charging system shall be accessible.</u></p> <p><u>107.2.2 Vehicle space size.</u> <u>Accessible vehicle spaces shall comply with the requirements for a van accessible parking space that is 132 inches (3350 mm) minimum in width with an adjoining access aisle that is 60 inches (1525 mm) minimum in width.</u></p> <p><u>1109.14-1107.3 Fuel-dispensing systems.</u> <u>Fuel-dispensing systems shall be accessible.</u></p>			X	Minimal	Clarification to make consistent with DOJ requirements

Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
E122-18	<p>1107.5.1.1 Accessible units. In Group I-1, Condition 1, at least 4 percent, but not less than one, of the dwelling units and sleeping units shall be Accessible units. In Group I-1, Condition 2, at least 10 percent, but not less than one, of the dwelling units and sleeping units shall be Accessible units. <u>Accessible dwelling units and sleeping units shall be dispersed among the various classes of units.</u></p>			X	Minimal	Scoping and technical criteria to allow for assisted toileting and bathing in some types of care facilities
E123-18	<p>1107.5.1.1 Accessible units in Group I-1, Condition 1. In Group I-1, Condition 1, at least 4 percent, but not less than one, of the <i>dwelling units and sleeping units</i> shall be <i>Accessible units</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> In not more than 50 percent of the Accessible units, water Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1109.2.2, <u>in not more than 50 percent of the Accessible units.</u> In not more than 50 percent of the Accessible units, roll-in-type Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1109.2.3, <u>in not more than 50 percent of the Accessible units.</u> <p>1107.5.1.2 Accessible units in Group I-1, Condition 2. In Group I-1, Condition 2, at least 10 percent, but not less than one, of the dwelling units and sleeping units shall be Accessible units.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> In not more than 50 percent of the Accessible units, water Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1109.2.2, <u>in not more than 50 percent of the Accessible units.</u> In not more than 50 percent of the Accessible units, roll-in-type Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1109.2.3, <u>in not more than 50 percent of the Accessible units.</u> 			X	Minimal	Scoping and technical criteria to allow for assisted toileting and bathing in some types of care facilities
E124-18	<p>1107.5.2.1 Accessible units. At least 50 percent but not less than one of each type of the <i>dwelling units and sleeping units</i> shall be <i>Accessible units</i>.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> In not more than 90 percent of the Accessible units, water Water closets shall not be required to comply with ICC 			X	Minimal	Scoping and technical criteria to allow for assisted toileting and

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Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>A117.1 where such water closets comply with Section 1109.2.2, <u>in not more than 90 percent of the accessible units.</u></p> <p>2. In not more than 90 percent of the Accessible units, roll-in-type Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1109.2.3, <u>in not more than 90 percent of the Accessible units.</u></p>					bathing in some types of care facilities
E125-18	<p>1107.5.4 Group I-2 rehabilitation facilities. In hospitals and rehabilitation facilities of Group I-2 occupancies that specialize in treating conditions that affect mobility, or units within either that specialize in treating conditions that affect mobility, 100 percent of the <i>dwelling units</i> and <i>sleeping units</i> shall be <i>Accessible units</i>.</p> <p>Exceptions:</p> <p>1. In not more than 50 percent of the Accessible units, water Water closets shall not be required to comply with ICC A 117.1 where such water closets comply with Section 1109.2.2, <u>in not more than 50 percent of Accessible units.</u></p> <p>2. In not more than 50 percent of the Accessible units, roll-in-type Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1109.2.3, <u>in not more than 50 percent of Accessible units.</u></p>			X	Minimal	Scoping and technical criteria to allow for assisted toileting and bathing in some types of care facilities
E128-18	<p>1109.2 Toilet and bathing facilities. Each toilet room and bathing room shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. Except as provided for in Sections 1109.2.2 <u>1109.2.3</u> and 1109.2.3 <u>1109.2.4</u>, at least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be accessible.</p> <p>Exceptions:</p> <p>1. Toilet rooms or bathing rooms accessed only through a private office, not for common or public use and intended for use by a single occupant, shall be permitted to comply with the specific exceptions in ICC A117.1.</p> <p>2. This section is not applicable to toilet and bathing rooms that serve dwelling units or sleeping units that are not required to be accessible by Section 1107.</p> <p>3. Where multiple single-user toilet rooms or bathing rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be accessible.</p>			X	Minimal	Scoping and technical criteria to allow for assisted toileting and bathing in some types of care facilities

Table 1. 2021 IBC MEP Changes Cost Impact

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Sub Code:						
	<p>4. Where no more than one urinal is provided in a toilet room or bathing room, the urinal is not required to be accessible.</p> <p>5. Toilet rooms or bathing rooms that are part of critical care or intensive care patient sleeping rooms serving Accessible units are not required to be accessible.</p> <p>6. Toilet rooms or bathing rooms designed for bariatrics patients are not required to comply with the toilet room and bathing room requirement in ICC A117.1. The sleeping units served by bariatrics toilet or bathing rooms shall not count toward the required number of Accessible sleeping units.</p> <p>7. <u>Where permitted in Section 1107, in toilet rooms or bathrooms serving Accessible units, water closets designed for assisted toileting shall comply with Sections 1109.2.2.</u></p> <p>8. Where toilet facilities are primarily for children's use, required accessible water closets, toilet compartments and lavatories shall be permitted to comply with children's provision of ICC A117.1.</p> <p>1109.2.2 Water closets designed for assisted toileting. <u>Water closets designed for assisted toileting shall comply with Section 1109.2.2.1 through 1109.2.2.6.</u></p> <p>1109.2.2.1 Location. <u>The centerline of the water closet shall be 24 inches (610 mm) minimum and 26 inches maximum (660 mm) from one side of the required clearance.</u></p> <p>1109.2.2.2 Clearance. <u>Clearance around the water closet shall comply with Section 1109.2.2.2.1 through 1109.2.2.2.3</u></p> <p>1109.2.2.2.1 Clearance width. <u>Clearance around a water closet shall be 66 inches (1675 mm) minimum in width, measured perpendicular from the side of the clearance that is 24 inches (610 mm) minimum and 26 inches (660 mm) maximum from the water closet centerline.</u></p> <p>1109.2.2.2.2 Clearance depth. <u>Clearance around the water closet shall be 78 inches (1980 mm) minimum in depth, measured perpendicular from the rear wall</u></p> <p>1109.2.2.2.3 Clearance overlap. <u>The required clearance around the water closet shall be permitted overlaps per ICC A117.1 Section 604.3.3</u></p> <p>1109.2.2.3 Height. <u>The height of the water closet seats shall comply with ICC A117.1 Section 604.4.</u></p> <p>1109.2.2.4 Swing-up grab bars. <u>The swing-up grab bars shall comply with ICC A117.1 Sections 609.2 and 609.8. Swing-up grab bars shall be provided on both sides of the water closet and shall comply with all of the following:</u></p> <p>1. <u>The centerline of the grab bar shall be 14 inches minimum to 16 inches (356 to 405 mm) maximum from the centerline of the water closet</u></p>					

Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>2. <u>The length of the grab bar is 36 inches (915 mm) minimum in length, measured from the rear wall to the end of the grab bar.</u></p> <p>3. <u>The top of the grab bar in the down position is 30 inches (760 mm) minimum and 34 inches (865 mm) maximum above the floor.</u></p> <p>1109.2.2.5 Flush controls. <u>Flush controls shall comply with ICC A117.1 Section 604.6.</u></p> <p>1109.2.2.6 Dispensers. <u>Toilet paper dispensers shall be mounted on at least one of the swing-up grab bars and the outlet of the dispenser shall be located at 24 inches (610 mm) minimum to 36 inches (915 mm) maximum from the rear wall.</u></p>					
E129-18	<p>1109.2 Toilet and bathing facilities. Each toilet room and bathing room shall be accessible. Where a floor level is not required to be connected by an accessible route, the only toilet rooms or bathing rooms provided within the facility shall not be located on the inaccessible floor. Except as provided for in Sections 1109.2.2 <u>1109.2.4</u> and 1109.2.3 <u>1109.2.5</u>, at least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be accessible.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Toilet rooms or bathing rooms accessed only through a private office, not for common or public use and intended for use by a single occupant, shall be permitted to comply with the specific exceptions in ICC A117.1. 2. This section is not applicable to toilet and bathing rooms that serve dwelling units or sleeping units that are not required to be accessible by Section 1107. 3. Where multiple single-user toilet rooms or bathing rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be accessible. 4. Where no more than one urinal is provided in a toilet room or bathing room, the urinal is not required to be accessible. 5. Toilet rooms or bathing rooms that are part of critical care or intensive care patient sleeping rooms serving Accessible units are not required to be accessible. 6. Toilet rooms or bathing rooms designed for bariatrics patients are not required to comply with the toilet room and bathing room requirement in ICC A117.1. The sleeping units served by bariatrics toilet or bathing rooms shall not count toward the required number of Accessible sleeping units. 		X		Necessary addition for clarification	

Table 1. 2021 IBC MEP Changes Cost Impact

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Sub Code:						
	<p>7. Where permitted in Section 1107, in bathrooms serving <u>Accessible units, showers designed for assisted toileting shall comply with Section 1109.2.3.</u></p> <p>8. Where toilet facilities are primarily for children's use, required accessible water closets, toilet compartments and lavatories shall be permitted to comply with children's provision of ICC A117.1.</p> <p>1109.2.3 Standard roll-in-type shower compartment designed for assisted bathing. <u>Standard roll-in-type shower compartments designed for assisted bathing shall comply with Section 1109.2.3.1 through 1109.2.3.8.</u></p> <p>1109.2.3.1 Size. <u>Standard roll-in-type shower compartments shall have a clear inside dimension of 60 inches (1525 mm) minimum in width and 30 inches (760 mm) minimum in depth, measured at the center point of opposing sides. An entry 60 inches (1525 mm) minimum in width shall be provided.</u></p> <p>1109.2.3.2 Clearance. <u>A clearance of 60 inches (1525 mm) minimum in length adjacent to the 60-inch (1525 mm) width of the open face of the shower compartment, and 30 inches (760 mm) minimum in depth, shall be provided.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>A lavatory complying with Section 606 shall be permitted at one end of the clearance.</u> <u>Where the shower compartment exceeds minimum sizes, the clear floor space shall be placed adjacent to the grab bars and 30 inches minimum from the back wall.</u> <p>1109.2.3.3 Grab bars. <u>Grab bars shall comply with ICC A117.1 Section 609 and shall be provided in accordance with Section 1109.2.3.3.1 and 1109.2.3.3.2. In standard roll-in type shower compartments, grab bars shall be provided on three walls. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the floor. Grab bars can be separate bars or one continuous bar.</u></p> <p>1109.2.3.3.1 Back-wall grab bar. <u>The back-wall grab bar shall extend the length of the back wall and extend within 6 inches (150 mm) maximum from the two adjacent side walls.</u></p> <p>Exception: <u>The back wall grab bar shall not be required to exceed 48 inches (1220 mm) in length. The rear grab bar shall be located with one end within 6 inches maximum of a side wall with a grab bar complying with Section 1109.2.3.3.2.</u></p>					

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Sub Code:						
	<p><u>1109.2.3.3.2 Side-wall grab bars.</u> The side wall grab bars shall extend the length of the wall and extend within 6 inches (150 mm) maximum from the adjacent back wall.</p> <p><u>Exceptions:</u></p> <ol style="list-style-type: none"> 1. The side-wall grab bar shall not be required to exceed 30 inches (760 mm) in length. The side grab bar shall be located with one end within 6 inches maximum of the back wall with a grab bar complying with Section 1109.2.3.3.1. 2. Where the side walls are located 72 inches (1830 mm) or greater apart, a grab bar is not required on one of the side-walls. <p><u>1109.2.3.4 Seats.</u> Wall-mounted folding seats shall not be installed.</p> <p><u>1109.2.3.5 Controls and hand showers.</u> In standard roll-in-type showers, the controls and hand shower shall be located 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor. Controls shall be located to facilitate caregiver access.</p> <p><u>1109.2.3.6 Hand showers.</u> Hand showers shall comply with ICC A117.1 Section 608.5.</p> <p><u>1109.2.3.7 Thresholds.</u> Thresholds shall comply with ICC A117.1 Section 608.6.</p> <p><u>1109.2.3.8 Shower enclosures.</u> Shower compartment enclosures for shower compartments shall comply with ICC A117.1 Section 608.7.</p> <p><u>1109.2.3.9 Water temperature.</u> Water temperature shall comply with ICC A117.1 Section 608.8.</p>					
E130-18	<p><u>1109.6 Bottle filling stations.</u> Where bottle filling stations are provided, they shall be accessible.</p> <p><u>Exception:</u> Bottle filling stations over drinking fountains for standing persons are not required to be accessible provided bottle filling stations are also located over the drinking fountains for persons using wheelchairs.</p>		X			Removes redundant language
E133-18	<p><u>1109.13 Controls, operating mechanisms and hardware.</u> Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible.</p> <p><u>Exceptions:</u></p> <ol style="list-style-type: none"> 1. Operable parts that are intended for use only by service or maintenance personnel shall not be required to be accessible. 2. Electrical or communication receptacles serving a dedicated use shall not be required to be accessible. 	X			Minimal	Clarification

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Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																	
		Decrease	None	Increase																			
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	<p>3. Where two or more outlets are provided in a kitchen above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to be accessible.</p> <p>4. Floor electrical receptacles shall not be required to be accessible.</p> <p>5. HVAC diffusers shall not be required to be accessible.</p> <p>6. Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to be accessible.</p> <p><u>27. Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to comply with Section 1010.1.9.2.</u></p> <p><u>3. Operable parts exempted in accordance with ICC A117.1 are not required to be accessible.</u></p>																						
G92-18	<p style="text-align: center;">[F] TABLE 509 INCIDENTAL USES</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">ROOM OR AREA</th> <th style="width: 60%;">SEPARATION AND/OR PROTECTION</th> </tr> </thead> <tbody> <tr> <td>Furnace room where any piece of equipment is over 400,000 Btu per hour input</td> <td>1 hour or provide automatic sprinkler system</td> </tr> <tr> <td>Rooms with boilers where the largest piece of equipment is over 15psi and 10 horsepower</td> <td>1 hour or provide automatic sprinkler system</td> </tr> <tr> <td>Refrigerant machinery room</td> <td>1 hour or provide automatic sprinkler system</td> </tr> <tr> <td>Hydrogen fuel gas rooms, not classified as Group H</td> <td>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.</td> </tr> <tr> <td>Incinerator rooms</td> <td>2 hours and provide automatic sprinkler system</td> </tr> <tr> <td>Paint shops, not classified as Group H, located in occupancies other than Group F</td> <td>2 hours; or 1 hour and provide automatic sprinkler system</td> </tr> <tr> <td>In Group E occupancies, laboratories and vocational shops not classified as Group H</td> <td>1 hour or provide automatic sprinkler system</td> </tr> <tr> <td>In Group I-2 occupancies, laboratories not classified as Group H</td> <td>1 hour and provide automatic sprinkler system</td> </tr> </tbody> </table>	ROOM OR AREA	SEPARATION AND/OR PROTECTION	Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system	Rooms with boilers where the largest piece of equipment is over 15psi and 10 horsepower	1 hour or provide automatic sprinkler system	Refrigerant machinery room	1 hour or provide automatic sprinkler system	Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.	Incinerator rooms	2 hours and provide automatic sprinkler system	Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system	In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system	In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system		X		Clarification
ROOM OR AREA	SEPARATION AND/OR PROTECTION																						
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system																						
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Refrigerant machinery room	1 hour or provide automatic sprinkler system																						
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.																						
Incinerator rooms	2 hours and provide automatic sprinkler system																						
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system																						
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system																						
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system																						

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Table 1. 2021 IBC MEP Changes Cost Impact

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Sub Code:							
	In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system					
	Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system					
	In Group I-2, laundry rooms over 100 square feet	1 hour					
	Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour					
	In Group I-2, physical plant maintenance shops	1 hour					
	In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour					
	In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system					
	In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour					
	Stationary storage battery systems having an energy capacity greater than the threshold quantity specified in Table 1206.2 of the International Fire Code	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, I and R occupancies.					
	Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.48 of NFPA 70 for protection and separation requirements.					
	For SI: 1 square foot = 0.0929 m ² , 1 pound per square inch (psi) = 6.9 kPa, 1 British thermal unit (Btu) per hour = 0.293 watts, 1 horsepower = 746 watts, 1 gallon = 3.785 L, 1 cubic foot = 0.0283 m ³ .						
G132-18	[P] 1209.3 Privacy. <u>Public restrooms shall be visually screened from outside entry or exit doorways to ensure user privacy within the restroom. This provision shall also apply where mirrors would</u>			X			Clarification

Table 1. 2021 IBC MEP Changes Cost Impact

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	<p><u>compromise personal privacy.</u> Privacy at water closets and urinals shall be provided in accordance with Sections 1209.3.1 and 1209.3.2.</p> <p>Exception: <u>Visual screening shall not be required for single-occupant toilet rooms with a lockable door.</u></p>					
G133-18	<p style="text-align: center;">[P] 2903 INSTALLATION OF FIXTURES</p> <p>[P] 2903.1 Setting. <u>Fixtures shall be set level and in proper alignment with reference to adjacent walls.</u></p> <p>[P] 2903.1.1 Water closets, urinals, lavatories and bidets. <u>A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction. Where partitions or other obstructions do not separate adjacent fixtures, fixtures shall not be set closer than 30 inches (762 mm) center to center between adjacent fixtures. There shall be not less than a 21-inch (533 mm) clearance in front of a water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762 mm) in width and not less than 60 inches (1524 mm) in depth for floor-mounted water closets and not less than 30 inches (762 mm) in width and 56 inches (1422 mm) in depth for wall-hung water closets.</u></p> <p>Exception: <u>An accessible children's water closet shall be set not closer than 12 inches (305 mm) from its center to the required partition or to the wall on one side.</u></p> <p>[P] 2903.1.2 Public Lavatories. <u>In employee and public toilet rooms, the required lavatory shall be located in the same room as the required water closet.</u></p> <p>[P] 2903.1.3 Location of fixtures and piping. <u>Piping, fixtures or equipment shall not be located in such a manner as to interfere with the normal operation of windows, doors or other means of egress openings.</u></p> <p>[P] 2903.1.4 Water closet compartment. <u>Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.</u> <u>2. Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.</u> <u>3. This provision is not applicable to toilet areas located within Group I-3 housing areas.</u> 		X			Clarification

Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>[P] 2903.1.5 Urinal Partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <u>Urinal partitions shall not be required in a single-occupant or family/assisted-use toilet room with a lockable door.</u> 2. <u>Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.</u> 					
G148-18	<p>3111.1.1 Wind resistance. Rooftop-mounted photovoltaic panels and modules (PV) panel systems and solar thermal collectors shall be designed in accordance with Section 1609.</p> <p>3111.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Section 2606.12 <u>this section</u>, the International Plumbing Code, the International Mechanical Code and the International Fire Code. <u>Where light-transmitting plastic covers are used, solar thermal collectors shall be designed in accordance with Section 2606.12.</u></p> <p>3111.3.2 Fire classification. Rooftop-mounted photovoltaic (PV) panel systems shall have a fire classification in accordance with Section 1505.9. Building-integrated photovoltaic systems-BIPV systems installed as the roof covering shall have a fire classification in accordance with Section 1505.8.</p> <p>3111.3.3 Building-integrated photovoltaic (BIPV) systems. Building-integrated photovoltaic systems that serve as roof coverings-BIPV systems installed as the roof covering shall be designed and installed in accordance with Section 1507.18,1507.</p>	X			Minimal	Clarification

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Sub Code:						
G149-18	<p>3101.1 Scope. The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, pedestrian walkways and tunnels, automatic vehicular gates, awnings and canopies, marquees, signs, towers, antennas, relocatable buildings, swimming pool enclosures and safety devices, and solar energy systems, <u>and public use restroom buildings on publicly owned lands in flood hazard areas.</u></p> <p style="text-align: center;">SECTION 3112-3114</p> <p style="text-align: center;">PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS</p> <p>3112-3114.1 General. Public use restroom buildings that contain toilet rooms, bathrooms, showers and changing rooms, and those portions of buildings that contain <u>For the purpose of this section, public restroom buildings are located on publicly owned lands in flood hazard areas and intended for public use. Public restroom buildings and portions of other buildings that contain public restrooms, are limited to</u> toilet rooms, bathrooms, showers and changing rooms, and where such. <u>Public restroom buildings and portions of buildings are intended for public use and located on publicly owned lands in flood hazard areas, that contain public restrooms shall comply with the requirements of this section. Public use restrooms that are not elevated or dry floodproofed in accordance with Section 1612 shall comply with Section</u> 3112 <u>3114.2. Portions of buildings that include uses other than public use toilet rooms, bathrooms, showers and changing rooms shall comply with Section 1612.</u></p> <p>3112-2-3114.2 Flood resistance. Public use restrooms that are located on publicly owned lands in flood hazard areas shall comply with the requirements of ASCE 24, except for elevation requirements, and shall comply with all of the following criteria:</p> <ol style="list-style-type: none"> 1. The building footprint is not more than 1,500 square feet. 2. Located, designed and constructed to resist the effects of flood hazards and flood loads to minimize flood damage from a combination of wind and water loads associated with the base flood. 3. Anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy during conditions of the base flood. 4. Constructed of flood damage-resistant materials. 5. Where enclosed by walls, the walls have flood openings. 6. Mechanical and electrical systems are located above the base flood elevation. 7. Plumbing fixtures and plumbing connections are located above the base flood elevation. 					

Table 1. 2021 IBC MEP Changes Cost Impact

CODE CHANGE #	2021 IBC MEP CHANGE SUMMARY	IBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>8. An emergency plan, approved by the jurisdiction, is submitted to the building official where the building design specifies documents specify implementation of protection measures prior to the onset of flooding conditions.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Minimum <u>necessary</u> electric service <u>equipment</u> required to address <u>health</u>, life safety and electric code requirements is permitted below the base flood <u>elevation in accordance with ASCE 24 provisions for electric elements installed below the minimum elevations.</u> 2. Plumbing fixtures and connections are permitted below the base flood elevation provided the fixtures and connections are designed and installed to minimize or eliminate infiltration of floodwaters into the sanitary sewage system and discharges from sanitary sewage systems into floodwaters. 					

APPENDIX B

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
ADM6-19	<p>Revise 2018 IMC as follows:</p> <p>[A] 101.2 Scope. This code shall regulate the design, installation, maintenance, <i>alteration</i> and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions and related processes within buildings. This code shall also regulate those mechanical systems, system components, <i>equipment</i> and appliances specifically addressed herein. The installation of fuel gas distribution piping and <i>equipment</i>, fuel gas-fired appliances and fuel gas-fired <i>appliance</i> venting systems shall be regulated by the International Fuel Gas Code.</p> <p>Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high above grade plane in height with a separate means of egress, and their accessory structures <u>not more than three stories above grade plane in height</u>, shall comply with <u>this code or</u> the International Residential Code.</p> <p>Revise 2018 IPC as follows:</p> <p>[A] 101.2 Scope. The provisions of this code shall apply to the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing systems within this jurisdiction. This code shall regulate nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel-gas-fired water heaters and water heater venting systems shall be regulated by the International Fuel Gas Code. Provisions in the appendices shall not apply unless specifically adopted.</p> <p>Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high above grade plane in height with a separate means of egress, and their accessory structures <u>not more than three stories above grade plane in height</u>, shall comply with <u>this code or</u> the International Residential Code.</p> <p>Revise 2018 IBC as follows:</p> <p>[A] 101.2 Scope. The provisions of the this code shall apply to the <i>repair, alteration, change of occupancy, addition to</i> and relocation of <i>existing buildings</i>.</p> <p>Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height, shall comply with this code or the International Residential Code.</p> <p>Revise 2018 IFGC as follows:</p>		X			Clarification

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 101.2 Scope. This code shall apply to the installation of fuel-gas <i>pipng</i> systems, fuel gas appliances, gaseous hydrogen systems and related accessories in accordance with Sections 101.2.1 through 101.2.5.</p> <p>Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories <u>high above grade plane in height</u> with a separate means of egress, and their accessory structures <u>not more than three stories above grade plane in height</u>, shall comply with <u>this code or</u> the International Residential Code.</p>					
ADM2 5-19	<p>Revise as follows:</p> <p>[A] 105.7.14 High-piled combustible storage. A construction permit is required for the installation of or modification to a structure exceeding with more than 500 square feet (46 m²), including aisles, for of high- piled combustible storage. Maintenance performed in accordance with this code is not considered to be a modification and does not require a construction permit.</p> <p>105.6.22 High-piled storage. An operational permit is required to use a building or portion thereof with more than 500 square feet (46 m²), including aisles, <i>of high-piled combustible storage.</i></p>		X			Clarification
ADM2 7-19	<p>Revise 2018 IMC as follows:</p> <p style="text-align: center;"><u>SECTION 107</u> <u>FEES</u></p> <p>[A] 106.5-107.1 Fees- Payment of fees. A permit shall not be issued valid until the fees prescribed in in Section 106.5.2 by law have been paid, nor shall an An amendment to a permit shall not be released until the additional fee, if any, due to an increase of the mechanical system, has been paid.</p> <p>107.2 <u>Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as <u>required, in accordance with the schedule as established by the applicable governing authority.</u></p> <p>[A] 106.5.2 Fee schedule. The fees for mechanical work shall be as indicated in the following schedule:</p> <p>[JURISDICTION TO INSERT APPROPRIATE SCHEDULE]</p> <p>Permit valuations. The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as mechanical equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official.</p> <p>[A] 106.5.4-107.4 Work commencing before permit issuance. Any person who commences <u>any</u> work on a mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit fee a fee established by the code official that shall be in addition to the required permit fees.</p>		X			Correlates all the I-Codes together and makes it easier to understand where the requirements are located.

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p><u>107.5 Related fees.</u> The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p>[A] 106.5.3 Fee refunds. The code official shall authorize the refunding of fees as follows:</p> <ol style="list-style-type: none"> 1. The full amount of any fee paid hereunder that was erroneously paid or collected. 2. Not more than [SPECIFY PERCENTAGE] percent of the permit fee paid where work has not been done under a permit issued in accordance with this code. 3. Not more than [SPECIFY PERCENTAGE] percent of the plan review fee paid where an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any plan review effort has been expended. <p>The code official shall not authorize the refunding of any fee paid, except upon written application filed by the original permittee not later than 180 days after the date of fee payment.</p> <p><u>107.6 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>Revise 2018 IPC as follows:</p> <p style="text-align: center;"><u>SECTION 107</u> <u>FEES</u></p> <p>106.6.1 <u>107.1 Fees. Payment of fees.</u> A permit shall not be issued valid until the fees prescribed in Section 106.6.2 by law have been paid, and an amendment to a permit shall not be released until the additional fee, if any, due to an increase of the plumbing systems, has been paid.</p> <p><u>107.2 Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p>106.6.2 <u>Fee schedule.</u> The fees for all plumbing work shall be as indicated in the following schedule: [JURISDICTION TO INSERT APPROPRIATE SCHEDULE]</p> <p>106.6.1-107.4 <u>Work commencing before permit issuance.</u> Any person who commences any work on a plumbing-mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit fee established by the code official that shall be in addition to the required permit fees.</p> <p><u>107.5 Related fees.</u> The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p>106.6.3 <u>Fee refunds.</u> The code official shall authorize the refunding of fees as follows:</p> <ol style="list-style-type: none"> 1. The full amount of any fee paid hereunder that was erroneously paid or collected. 2. Not more than [SPECIFY PERCENTAGE] percent of the permit fee paid where 					

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>work has been done under a permit issued in accordance with this code.</p> <p>3. Not more than [SPECIFY PERCENTAGE] percent of the plan review fee paid where an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any plan review effort has been expended.</p> <p>The code official shall not authorize the refunding of any fee paid except upon written application filed by the original permittee not later than 180 days after the date of fee payment.</p> <p><u>107.6 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>Add new text to 2018 IPMC as follows:</p> <p style="text-align: center;"><u>SECTION 104</u> <u>FEES</u></p> <p>[A] 103.5 <u>104.1 Fees.</u> The fees for activities and services performed by the department in carrying out its responsibilities under this code shall be as indicated in the following schedule established by the applicable governing authority.</p> <p>{JURISDICTION TO INSERT APPROPRIATE SCHEDULE.}</p> <p><u>104.2 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>Add new text to 2018 IFGC as follows:</p> <p style="text-align: center;"><u>SECTION 107</u> <u>FEES</u></p> <p>[A] 106.6 <u>107.1 Fees-Payment of fees.</u> A permit shall not be issued valid until the fees prescribed in Section 106.6.2 by law have been paid, nor shall an amendment to a permit shall not be released until the additional fee, if any, due to an increase of the installation, has been paid.</p> <p><u>107.2 Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p>[A] 106.6.2 <u>Fee schedule.</u> The fees for work shall be as indicated in the following schedule.</p> <p>{JURISDICTION TO INSERT APPROPRIATE SCHEDULE}</p> <p><u>107.3 Permit valuations.</u> The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as plumbing equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official.</p> <p>[A] 106.6.1 <u>107.4 Work commencing before permit issuance.</u> Any person who commences any work on an installation a mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit fee a fee established by the code official that shall be in addition to the required permit fees.</p>					

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>107.5 Related fees.</u> The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p>[A] 106.6.3 Fee refunds. The code official shall authorize the refunding of fees as follows:</p> <ol style="list-style-type: none"> 1. The full amount of any fee paid hereunder that was erroneously paid or collected. 2. Not more than [SPECIFY PERCENTAGE] percent of the permit fee paid where work has not been done under a permit issued in accordance with this code. 3. Not more than [SPECIFY PERCENTAGE] percent of the plan review fee paid where an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any plan review effort has been expended. <p>The code official shall not authorize the refunding of any fee paid, except upon written application filed by the original permittee not later than 180 days after the date of fee payment.</p> <p><u>107.6 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>Add new text to 2018 ISPSC as follows:</p> <p style="text-align: center;">SECTION 106 FEES</p> <p>[A] 105.6.1 <u>106.1 Fees. Payment of fees.</u> A permit shall not be valid until the fees prescribed by law have been paid. An amendment to a permit shall not be released until the additional fee, if any, has been paid.</p> <p>[A] 105.6.2 <u>Fee schedule.</u> The fees for work shall be as indicated in the following schedule:</p> <p>[JURISDICTION TO INSERT APPROPRIATE SCHEDULE]</p> <p><u>106.2 Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p><u>106.3 Permit valuations.</u> The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as mechanical equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official.</p> <p>[A] 105.6.1 <u>106.4 Work commencing before permit issuance.</u> Any person who commences any work on a mechanical system before obtaining the necessary permits shall be subject to a fee as indicated in the adopted fee schedule and would established by the code official that shall be in addition to the required permit fees.</p> <p><u>106.5 Related fees.</u> The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized</p>					

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p>[A] 105.6.3 Fee refunds. The code official shall authorize the refunding of fees as follows:</p> <ol style="list-style-type: none"> 1. The full amount of any fee paid hereunder that was erroneously paid or collected. 2. Not more than [SPECIFY PERCENTAGE] percent of the permit fee paid when no work has been done under a permit issued in accordance with this code. 3. Not more than [SPECIFY PERCENTAGE] percent of the plan review fee paid when an application for a permit for which a plan review fee has been paid is withdrawn or canceled before any plan review effort has been expended. <p>The code official shall not authorize the refunding of any fee paid except upon written application filed by the original permittee not later than 180 days after the date of fee payment.</p> <p><u>106.6 Refunds.</u> The code official is authorized to establish a refund policy.</p>					
ADM3 1-19 Part I	<p>Add new text to 2018 IPC as follows:</p> <p style="text-align: center;"><u>SECTION 108</u> <u>NOTICE OF APPROVAL</u></p> <p><u>107.5-108.1 Approval.</u> After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p><u>107.5.1-108.2 Revocation.</u> The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new text to 2018 IMC as follows:</p> <p style="text-align: center;"><u>SECTION 108</u> <u>NOTICE OF APPROVAL</u></p> <p>[A] <u>107.4-108.1 Approval.</u> After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] <u>107.4.1-108.2 Revocation.</u> The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new text to 2018 IFGC as follows:</p> <p style="text-align: center;"><u>SECTION 108</u> <u>NOTICE OF APPROVAL</u></p>		X		Provides consistency through the I-Codes by using standard terminology and it is also consistent with previous actions.	

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>[A] 107.4-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 107.4.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied or where it is determined that the building or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>2018 International Swimming Pool and Spa Code</p> <p>Add new text to 2018 ISPSC as follows:</p> <p style="text-align: center;"><u>SECTION 107</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>[A] 106.17-107.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 106.17.1-107.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of the incorrect information supplied, or where it is determined that the building or structure, premise, system or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new text to 2018 International Private Sewage Disposal Code as follows:</p> <p style="text-align: center;"><u>SECTION 108</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>[A] 107.7-108.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 107.7.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p>					
ADM3 1-19 Part II	<p>Add new text to 2018 IPC as follows:</p> <p style="text-align: center;"><u>SECTION 108</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>107.5-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>107.5.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied, or where it</p>		X		Provides consistency through the I-Codes by using standard terminology and it is also consistent	

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new text to 2018 IMC as follows:</p> <p style="text-align: center;"><u>SECTION 108</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>[A] 107.4.1 108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 107.4.1 108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new text to 2018 IFGC as follows:</p> <p style="text-align: center;"><u>SECTION 108</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>[A] 107.4.1 108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 107.4.1 108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied or where it is determined that the building or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new text to 2018 ISPSC as follows:</p> <p style="text-align: center;"><u>SECTION 107</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>[A] 106.17 107.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 106.17.1 107.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of the incorrect information supplied, or where it is determined that the building or structure, premise, system or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p>				with previous actions.	

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>Add new text to 2018 International Private Sewage Disposal Code as follows:</p> <p style="text-align: center;"><u>SECTION 108</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>[A] 107.7-108.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 107.7.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p>					
ADM3 1-19 Part III	<p>Add new text to 2018 IECC as follows:</p> <p style="text-align: center;"><u>SECTION R106</u></p> <p style="text-align: center;"><u>NOTICE OF APPROVAL</u></p> <p>R105.7-R106.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the <i>code official</i>.</p> <p>R105.7.1-R106.2 Revocation. The <i>code official</i> is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the certificate is issued in error, or on the basis of incorrect information supplied, or where it is determined that the <i>building</i> or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p>		X		Clarification	
ADM3 9-19 Part I	<p>Modify as 2018 IBC as follows:</p> <p>[A] 112.2 Temporary connection. The building official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power, water system or power-sewer system for the purpose of testing systems or for use under a temporary approval.</p> <p>Modify as 2018 IPC as follows:</p> <p>108.2 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power, water system or power-sewer system for the purpose of testing plumbing systems or for use under a temporary approval.</p> <p>Modify as 2018 IMC as follows:</p> <p>[A] 108.2 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power, water system or power-sewer system for the purpose of testing systems or for use under a temporary approval.</p> <p>Modify as 2018 IFGC as follows:</p> <p>[A] 108.2 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power, water system or power-sewer system for the purpose of testing systems or for use under a temporary approval.</p>		X		Clarification	

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>Modify as 2018 IEBC as follows: [A] 111.2 Temporary connection. The <i>code official</i> shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power water system or power-sewer system for the purpose of testing systems or for use under a temporary approval.</p> <p>Modify as 2018 International Private Sewage Disposal Code as follows: [A] 108.2 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power, water system or power-sewer system for the purpose of testing systems or for use under a temporary approval.</p> <p>Modify 2018 International Wildland-Urban Interface Code as follows: 113.2 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power, water system or power-sewer system for the purpose of testing systems or for use under a temporary approval.</p> <p>Modify as 2018 ISPSC as follows: [A] 107.2 Temporary connection. The code official shall have the authority to authorize the temporary connection of the building or system to the utility, source of energy, fuel, power, water system or power-sewer system for the purpose of testing systems or for use under a temporary approval.</p>					
ADM4 6-19 Part I	<p>Modify as 2018 IEBC as follows: [A] 107.1 General. Submittal documents consisting of <i>construction documents</i>, statement of <i>special inspections</i>, geotechnical report and other data shall be submitted in two or more sets, <u>or in a digital format where allowed by the building official</u>, with each <i>permit</i> application. The <i>construction documents</i> shall be prepared by a <i>registered design professional</i> where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the <i>building official</i> is authorized to require additional <i>construction documents</i> to be prepared by a <i>registered design professional</i>.</p> <p>Exception: The <i>building official</i> is authorized to waive the submission of <i>construction documents</i> and other data not required to be prepared by a <i>registered design professional</i> if it is found that the nature of the work applied for is such that review of <i>construction documents</i> is not necessary to obtain compliance with this code.</p> <p>Modify as 2018 IFC as follows: [A] 105.4.2 Information on construction documents. <i>Construction documents</i> shall be drawn to scale on suitable material. Electronic media documents <u>Documents in a digital format</u> are allowed to be submitted where <i>approved</i> by the <i>fire code official</i>. <i>Construction documents</i> shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations as determined by the <i>fire code official</i>.</p>		X			Clarification

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>Modify as 2018 IEBC as follows:</p> <p>[A] 106.1 General. Submittal documents consisting of construction documents, special inspection and structural observation programs, investigation and evaluation reports, and other data shall be submitted in two or more sets, <u>or in a digital format where allowed by the building official,</u> with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the <i>code officialis</i> authorized to require additional construction documents to be prepared by a registered design professional.</p> <p>Exception:</p> <p>The <i>code official</i> is authorized to waive the submission of construction documents and other data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that reviewing of construction documents is not necessary to obtain compliance with this code.</p> <p>Modify as 2018 IEPC as follows:</p> <p>[A] 106.3.1 Construction documents. Construction documents, engineering calculations, diagrams and other such data shall be submitted in two or more sets, <u>or in a digital format where allowed by the building official,</u> with each application for a permit. The code official shall require construction documents, computations and specifications to be prepared and designed by a registered design professional where required by state law. Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. Construction documents for buildings more than two stories in height shall indicate where penetrations will be made for pipes, fittings and components and shall indicate the materials and methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception:</p> <p>The code official shall have the authority to waive the submission of construction documents, calculations or other data if the nature of the work applied for is such that reviewing of construction documents is not necessary to determine compliance with this code.</p> <p>Modify as 2018 IMC as follows:</p> <p>[A] 106.3.1 Construction documents. <i>Construction documents,</i> engineering calculations, diagrams and other data shall be submitted in two or more sets, <u>or in a digital format where allowed by the building official,</u> with each application for a permit. The code official shall require <i>construction documents,</i> computations and specifications to be prepared and designed by a <i>registered design professional</i> where required by state law. Where special conditions exist, the code official is authorized to require additional <i>construction documents</i> to be prepared by a <i>registered design professional.</i> <i>Construction documents</i> shall be drawn to scale and shall be of</p>					

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. <i>Construction documents</i> for buildings more than two stories in height shall indicate where penetrations will be made for mechanical systems, and the materials and methods for maintaining required structural safety, fire- resistance rating and fireblocking.</p> <p>Exception: The code official shall have the authority to waive the submission of <i>construction documents</i>, calculations or other data if the nature of the work applied for is such that reviewing of <i>construction documents</i> is not necessary to determine compliance with this code.</p> <p>Modify as 2018 IFGC as follows: [A] 106.3.1 Construction documents. <i>Construction documents</i>, engineering calculations, diagrams and other data shall be submitted in two or more sets, <u>or in a digital format where allowed by the building official</u>, with each application for a permit. The code official shall require <i>construction documents</i>, computations and specifications to be prepared and designed by a registered design professional where required by state law. <i>Construction documents</i> shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. <i>Construction documents</i> for buildings more than two stories in height shall indicate where penetrations will be made for installations and shall indicate the materials and methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception: The code official shall have the authority to waive the submission of <i>construction documents</i>, calculations or other data if the nature of the work applied for is such that reviewing of <i>construction documents</i> is not necessary to determine compliance with this code.</p> <p>Modify as 2018 ISPSC as follows: A] 105.3 Construction documents. Construction documents, engineering calculations, diagrams and other such data shall be submitted in two or more sets, <u>or in a digital format where allowed by the building official</u>, with each application for a permit. The code official shall require construction documents, computations and specifications to be prepared and designed by a registered design professional where required by state law. Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code.</p> <p>Modify 2018 International Private Sewage Disposal Code as follows: [A] 106.2.1 Construction documents. An application for a permit shall be accompanied by not less than two copies of construction documents drawn to scale, <u>or in a digital format where allowed by the building official</u>, with sufficient clarity and detail</p>					

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																	
		Decrease	None	Increase																			
Sub Code:																							
	<p>dimensions showing the nature and character of the work to be performed. Specifications shall include pumps and controls, dose volume, elevation differences (vertical lift), pipe friction loss, pump performance curve, pump model and pump manufacturer. The code official is permitted to waive the requirements for filing construction documents where the work involved is of a minor nature. Where the quality of the materials is essential for conformity to this code, specific information shall be given to establish such quality, and this code shall not be cited, or the term “legal” or its equivalent used as a substitute for specific information.</p> <p>Modify 2018 International Wildland-Urban Interface Code as follows: [A] 108.1 General. Plans, engineering calculations, diagrams and other data shall be submitted in not fewer than two sets, <u>or in a digital format where allowed by the building official,</u> with each application for a permit. The construction documents shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed. Where special conditions exist, the code official is authorized to require additional documents to be prepared by a registered design professional.</p> <p>Exception: Submission of plans, calculations, construction inspection requirements and other data, if it is found that the nature of the work applied for is such that reviewing of plans is not necessary to obtain compliance with this code.</p>																						
ADM4 7-16	<p>Modify as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">ASTM</th> <th colspan="2">ASTM</th> </tr> <tr> <th>Standard Reference Number</th> <th>Title</th> <th>Referenced in Code(s):</th> </tr> </thead> <tbody> <tr> <td>E136—2016A 2019</td> <td>Standard Test Method for <u>Assessing Combustibility of Behavior of</u> Materials Using in a Vertical Tube Furnace at 750°C</td> <td>IBC</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">NSF</th> <th colspan="2">NSF</th> </tr> <tr> <th>Standard Reference Number</th> <th>Title</th> <th>Referenced in Code(s):</th> </tr> </thead> <tbody> <tr> <td>61--2017 61--2018</td> <td>Drinking Water System Components—Health Effects</td> <td>IRC IPC</td> </tr> </tbody> </table>	ASTM	ASTM		Standard Reference Number	Title	Referenced in Code(s):	E136—2016A 2019	Standard Test Method for <u>Assessing Combustibility of Behavior of</u> Materials Using in a Vertical Tube Furnace at 750°C	IBC	NSF	NSF		Standard Reference Number	Title	Referenced in Code(s):	61--2017 61--2018	Drinking Water System Components—Health Effects	IRC IPC		X		Clarification
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CODE CHANGE #	2021 IEBC CHANGE SUMMARY			IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	None	Increase		
	SMACNA	SMACNA						
	Standard Reference Number	Title	Referenced in Code(s):					
	ANSI/SMACNA-1999-2013	Standard Specification for Composite Steel Joists, CJ-Series	IMC					
	ANSI/SMACNA-2004-2011	Rectangular Industrial Duct Construction Standards	IMC					
EB8-19	<p>Modify as follows:</p> <p style="text-align: center;">SECTION 301 ADMINISTRATION</p> <p>301.5 Compliance with accessibility. Accessibility requirements for existing buildings shall comply with the 2009 edition of ICC A117.1.</p> <p style="text-align: center;">SECTION 305 ACCESSIBILITY FOR EXISTING BUILDINGS</p> <p>305.1 Scope. The provisions of Sections 305.1 through 305.9 apply to maintenance, <i>change of occupancy, additions and alterations to existing buildings</i>, including those identified as <i>historic buildings</i>.</p> <p>305.2 Design. Buildings and facilities shall be designed and constructed to be <u>accessible in accordance with this code and the alteration and existing building provisions in ICC A117.1, as applicable.</u></p> <p>305.8.2 Elevators. Altered elements of existing elevators shall comply with ASME A17.1 and ICC A117.1. Such elements shall also be altered in elevators programmed to respond to the same hall call control as the altered elevator.</p> <p>305.8.3 Platform lifts. Platform (wheelchair) lifts complying with ICC A117.1 and installed in accordance with ASME A18.1 shall be permitted as a component of an accessible route.</p>				X		Makes reference to A117.1 more consistent with how standards are referenced within the I-Codes.	
EB32-19	<p>Revise as follows:</p> <p>305.8.10 Toilet rooms. Where it is <i>technically infeasible</i> to alter existing toilet and bathing rooms to be <i>accessible</i>, an accessible <u>one accessible single user toilet room or one accessible family or assisted-use toilet or bathing room</u> constructed in accordance with Section 1109.2.1 of the International Building Code is permitted. The family or assisted-use toilet or bathing- <u>This toilet room</u> shall be located on the same floor and in the same area as the existing toilet or bathing rooms. At the inaccessible toilet and bathing rooms, directional signs indicating the location of the nearest family or assisted-use <u>such toilet room or bathing room</u> shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.</p> <p>305.8.11 Bathing rooms. Where it is <i>technically infeasible</i> to alter existing bathing rooms to be <i>accessible</i>, <u>one accessible single user bathing room or one accessible</u></p>				X		Clarification	

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>family or assisted-use bathing room constructed in accordance with Section 1109.2.1 of the <i>International Building Code</i> is permitted. This accessible bathing room shall be located on the same floor and in the same area as the existing bathing rooms. At the inaccessible bathing rooms, directional signs indicating the location of the nearest such bathing room shall be provided. These directional signs shall include the International Symbol of Accessibility and sign characters shall meet the visual character requirements in accordance with ICC A117.1.</p> <p>305.9.4 Toilet and bathing facilities. Where toilet rooms are provided, not fewer than one accessible single user toilet room or one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.</p> <p>305.9.5 Bathing facilities. Where bathing rooms are provided, not fewer than one accessible single user bathing room or one accessible family or assisted-use bathing rooms complying with Section 1109.2.1 of the <i>International Building Code</i> shall be provided.</p>					
EB37-19	<p>305.9 Historic buildings structures. These provisions shall apply to facilities designated as historic structures that undergo alterations or a change of occupancy, unless technically infeasible. Where compliance with the requirements for accessible routes, entrances or toilet rooms would threaten or destroy the historic significance of the facility historic structure, as determined by the authority having jurisdiction, the alternative requirements of Sections 305.9.1 through 305.9.4 for that element shall be permitted.</p> <p>Exception: Type B dwelling or sleeping units required by Section 1107 of the International Building Code are not required to be provided in historic buildings.</p> <p>305.9.1 Site arrival points. Not fewer than one accessible route from a site arrival point to an accessible entrance shall be provided.</p> <p>305.9.2 Multiple-level buildings and facilities. An accessible route from an accessible entrance to public spaces on the level of the accessible entrance shall be provided.</p> <p>305.9.3 Entrances. Not fewer than one main entrance shall be accessible.</p> <p>Exception: If a publicWhere an entrance cannot be made accessible in accordance with Section 305.8.1, an accessible entrance that is unlocked while the building is occupied shall be provided; or, a locked accessible entrance with a notification system or remote monitoring shall be provided.</p> <p>Signs complying with Section 1111 of the International Building Code shall be provided at the public entrance entrances and the accessible entrance.</p> <p>305.9.4 Toilet and bathing facilities. Where toilet rooms are provided, not fewer than one accessible family or assisted-use toilet room complying with Section 1109.2.1 of the International Building Code shall be provided.</p> <p>305.9.5 Type B units. Type B dwelling or sleeping units required by Section 1107 of the <i>International Building Code</i> are not required to be provided in historic buildings.</p>		X		Clarifies that historic buildings need to comply with accessibility requirements where technically feasible	

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Table 2. 2021 IEBC Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
EB40-19	<p>Modify as follows:</p> <p>306.1 Smoke Alarms. Where an alteration, addition, change of occupancy or relocation of a building is made to an existing building or structure of a Group R and I-1 occupancies, the existing building shall be provided with smoke alarms in accordance with Section 1103.8 of the International Fire Code or Section R314 of the International Residential Code.</p> <p>Exception: <u>Work classified as Level 1 Alterations in accordance with Chapter 7.</u></p> <p>307.1 Carbon monoxide detection. Where an addition, alteration, change of occupancy or relocation of a building is made to Group I-1, I-2, I-4 and R occupancies and classrooms of Group E occupancies, the existing building shall be provided with carbon monoxide detection in accordance with Section 1103.9 of the International Fire Code or Section R315 of the International Residential Code.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Work involving the exterior surfaces of buildings, such as the replacement of roofing or siding, the addition or replacement of windows or doors, or the addition of porches or decks. 2. Installation, alteration or repairs of plumbing or mechanical systems, other than fuel-burning appliances. 3. <u>Work classified as Level 1 Alterations in accordance with Chapter 7.</u> 	X			Minimal	Clarification: Less stringent requirement for alteration serves the same purpose
EB46-19	<p>406.1.4 Group I-2 receptacles. Receptacles in patient bed locations of Group I-2 that are not “hospital grade” shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.</p> <p>406.1.4 Healthcare facilities. Portions of electrical systems being repaired in Group I-2, ambulatory care facilities and outpatient clinics shall comply with NFPA 99 requirements for repairs.</p> <p>408.3 Healthcare facilities. Portions of Medical Gas systems being repaired in Group I-2, ambulatory care facilities and outpatient clinics shall comply with NFPA 99 requirements for repairs.</p>		X			Necessary to link with the required regulations for healthcare occupancies which requires compliance with NFPA 99 for repairs of electrical and medical gas systems.
EB49-19	<p>501.3 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any altered or added portion of an existing electrical or medical gas systems shall be required to meet installation and equipment requirements in NFPA 99.</p> <p style="text-align: center;"><u>SECTION 706</u> <u>ELECTRICAL</u></p> <p>706.1 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any altered, portion of an existing electrical systems shall be required to meet installation and equipment requirements in NFPA 99</p>		X			Necessary addition for clarification

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Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>807.3 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any added portion of an existing electrical systems shall be required to meet installation and equipment requirements in NFPA 99.</p> <p>809.2 Healthcare facilities. In Group I-2 facilities, ambulatory care facilities and outpatient clinics, any added portion of an existing medical gas systems shall be required to meet installation and equipment requirements in NFPA 99.</p>					
EB92-19	<p style="text-align: center;">SECTION 809 PLUMBING</p> <p>809.1 Minimum fixtures. Where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the International Plumbing Code based on the increased occupant load.</p> <p>1009.1 Increased demand. Where the occupancy of an <i>existing building</i> or part of an <i>existing building</i> is changed such that the new occupancy is subject to increased or different plumbing fixture requirements or to increased water supply requirements in accordance with the International Plumbing Code, the new occupancy shall comply with the intent of the respective International Plumbing Code provisions.</p> <p>Exception: Only where the occupant load of the story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the International Plumbing Code based on the increased occupant load.</p>	X			Minimal	Removes an unnecessary definition.
EB94-19	<p>Modify as follows:</p> <p style="text-align: center;">SECTION 905 MEANS OF EGRESS</p> <p>905.1 General. The means of egress shall comply with the requirements of Section 805 except as specifically required in Sections 905.2 and 905.3.</p> <p>905.2 Means-of-egress lighting. Means of egress from the highest <i>work area</i> floor to the floor of exit discharge shall be provided with artificial lighting within the exit enclosure in accordance with the requirements of the International Building Code.</p> <p>905.3 Exit signs. Means of egress from the highest <i>work area</i> floor to the floor of exit discharge shall be provided with exit signs in accordance with the requirements of the International Building Code.</p> <p>905.4 Two-way communications systems. In buildings with elevator service, a two-way communication systems shall be provided <u>where required by</u> in accordance with Section 1009.8 of the International Building Code.</p> <p style="text-align: center;">SECTION 503 ALTERATIONS</p> <p>503.17 Two-way communications systems. Where the work area for alterations exceeds 50 percent of the building area and the building has elevator service, a two way communication systems shall be provided <u>where required by</u> in accordance with Section 1009.8 of the International Building Code.</p>			X	\$2.00 per Sqft. of surface area	Clarification
G32-18	<p>Modify as follows:</p> <p>404.5 Smoke control. A smoke control system shall be installed in accordance with Section 909.</p>	X			Minimal	Clarification

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Sub Code:						
	<p>Exceptions:</p> <ol style="list-style-type: none"> 1. In other than Group I-2, and Group I-1, Condition 2, smoke control is not required for atriums that connect only two stories. 2. A smoke control system is not required for atriums connecting more than two stories when all of the following are met: <ol style="list-style-type: none"> 2.1. Only the 2 lowest stories shall be permitted to be open to the atrium 2.2. All stories above the lowest 2 stories shall be separated from the atrium in accordance with Section 404.6 <u>the provision for a shaft in Section 713.4.</u> 					
G39-18	<p>Modify as follows:</p> <p style="text-align: center;">SECTION 202 DEFINITIONS</p> <p>202 MECHANICAL-ACCESS ENCLOSED PARKING GARAGE. An enclosed parking garage other than single car stacking systems, which employs parking machines, lifts, elevators or other mechanical devices for vehicle moving from and to street level and in which public occupancy in the garage is prohibited in all areas except the vehicle access bay.</p> <p>406.6.4 Mechanical-access garages. Mechanical-access enclosed parking garages shall be in accordance with Sections 406.6.4.1 through 406.6.4.5.</p> <p>406.6.4.1 Separation. Mechanical-access enclosed parking garages shall be separated from other occupancies and accessory uses by not less than 2-hour fire barriers constructed in accordance with Section 707 or by not less than 2-hour horizontal assemblies constructed in accordance with Section 711, or both.</p> <p>406.6.4.2 Smoke removal. A mechanical smoke removal system, in accordance with Section 910.4, shall be provided for all areas containing an enclosed mechanical-access parking enclosed parking garage.</p> <p>406.6.4.3 Fire control equipment room. The fire control equipment, consisting of the fire alarm control unit, mechanical ventilation controls and emergency shut down switch shall be provided in a room with exterior access located where the equipment is able to be accessed by the fire service from a secured exterior door of the building. The room shall be a minimum of 50 square feet in size and location shall be in a location that is approved by the fire code official.</p> <p>406.6.4.4 Firefighter-Fire department access doors. Access doors shall be provided at the ground level for firefighter access as approved by the fire code official in accordance with Section 3206.7.</p> <p>406.6.4.5 3.1 Emergency shutdown switch. A-The mechanical parking system shall be provided with a manually activated emergency shutdown switch shall be provided for use by emergency personnel. The switch shall be clearly identified and shall be in a location approved by the fire code official.</p> <p>Modify 2018 International Fire Code as follows:</p> <p style="text-align: center;">SECTION 202 GENERAL DEFINITIONS</p>	X			Minimal	Clarification Also note the added control room and shutdown switch requirement

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	<p>MECHANICAL-ACCESS ENCLOSED PARKING GARAGE. An enclosed parking garage, other than single car stacking system, which employs parking machines, lifts, elevators or other mechanical devices for vehicle moving from and to street level and in which public occupancy in the garage is prohibited in all areas except the vehicle access bay.</p> <p>903.2.10.2 Mechanical-access enclosed parking garages. An approved automatic sprinkler system shall be provided throughout buildings used for the storage of motor vehicles in a mechanical-access enclosed parking garage. The portion of the building that contains the mechanical-access enclosed parking garage shall be protected with a performance-based design specially engineered automatic sprinkler system.</p>				-	
G40-18	<p>Modify as follows:</p> <p>407.2.5 Nursing home housing units. In Group I-2, Condition 1 occupancies, in areas where nursing home residents are housed, shared living spaces, group meeting or multipurpose therapeutic spaces shall be permitted to be open to the corridor, where all of the following criteria are met:</p> <ol style="list-style-type: none"> 1. The walls and ceilings of the space are constructed as required for corridors. 2. The spaces are not occupied as resident sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses. 3. The open space is protected by an automatic fire detection system installed in accordance with Section 907. 4. The corridors onto which the spaces open, in the same smoke compartment, are protected by an automatic fire detection system installed in accordance with Section 907, or the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2. 5. The space is arranged so as not to obstruct access to the required exits. <p>407.2.6 Nursing home cooking facilities. In Group I-2, Condition 1 occupancies, rooms or spaces that contain a cooking facility with domestic cooking appliances shall be permitted to be open to the corridor where all of the following criteria are met:</p> <ol style="list-style-type: none"> 1. The number of care recipients housed in the smoke compartment shall not be greater than 30. 2. The number of care recipients served by the cooking facility shall not be greater than 30. 3. Not more than one cooking facility area shall be permitted in a smoke compartment. 4. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves. 5. The corridor shall be a clearly identified space delineated by construction or floor pattern, material or color. 6. The space containing the domestic cooking facility shall be arranged so as not to obstruct access to the required exit. 7. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Codes shall be provided over cooktops and ranges. The cooking appliance shall comply with Section 407.2.7. 8. Cooktops and ranges shall be protected in accordance with Section 904.13. 		X			Makes the provisions easier to enforce and bring the IBC closer to the CMS requirements.

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		Decrease	None	Increase		
Sub Code:						
	<p>9. A shut-off for the fuel and electrical power supply to the cooking equipment shall be provided in a location that is accessible only to staff.</p> <p>10. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.</p> <p>11. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906, and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.</p> <p>407.2.7 Domestic cooking appliances. In Group I-2 occupancies, installation of cooking appliances used in domestic cooking facilities shall comply with all of the following:</p> <ol style="list-style-type: none"> The types of cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops and ranges. Cooktops and ranges shall be protected in accordance with Section 904.13. A shut-off for the fuel and electrical power supply to the cooking equipment shall be provided in a location that is accessible only to staff. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906, and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance. <p>Modify 2018 International Fire Cod as follows:</p> <p>904.13 Domestic cooking systems facilities. Cooktops and ranges installed in the following occupancies shall be protected in accordance with Section 904.13.1:</p> <ol style="list-style-type: none"> In Group I-1 occupancies where domestic cooking facilities are installed in accordance with Section 420.8 of the International Building Code. In Group I-2, Condition 1 occupancies where domestic cooking facilities are installed in accordance with Section 407.2.6 <u>407.2.7</u> of the International Building Code. In Group R-2 college dormitories where domestic cooking facilities are installed in accordance with Section 420.10 of the International Building Code. 					
G41-18	<p>Revise as follows:</p> <p>407.2.6 Nursing home cooking facilities. In Group I-2, Condition 1 occupancies, rooms or spaces that contain a cooking facility with domestic cooking appliances shall be permitted to be open to the corridor where all of the following criteria are met:</p> <ol style="list-style-type: none"> The number of care recipients housed in the smoke compartment shall not be greater than 30. The number of care recipients served by the cooking facility shall not be greater than 30. Not more than one cooking facility area shall be permitted in a smoke compartment. 		X			Clarification

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Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>4. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves.</p> <p>5. The corridor shall be a clearly identified space delineated by construction or floor pattern, material or color.</p> <p>6. The space containing the domestic cooking facility shall be arranged so as not to obstruct access to the required exit.</p> <p>7. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops and ranges.</p> <p>8. Cooktops and ranges shall be protected in accordance with Section 904.13.</p> <p>9. A shut-off for the fuel and electrical power supply to the cooking equipment shall be provided in a location that is accessible only to staff.</p> <p>10. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.</p> <p>11. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906, and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.</p> <p>Exceptions:</p> <p>1. <u>Cooktops and ranges located within smoke compartments with no patient sleeping or patient care areas are not required to comply with this section.</u></p> <p>2. <u>Cooktops and ranges used for care recipient training or nutritional counseling are not required to comply with Item 8 of this section.</u></p>					
G49-18	<p>Modify as follows:</p> <p>415.6.1 Liquid use, dispensing and mixing rooms and rRooms for flammable or combustible liquid use, dispensing or mixing in open systems. Liquid use, dispensing and mixing rooms and rRooms for flammable or combustible liquid use, dispensing or mixing in open systems, where vapors are emitted, having a floor area of not more than 500 square feet (46.5 m²) need not be located on the outer perimeter of the building where they are in accordance with the International Fire Code and NFPA 30.</p> <p>415.6.2 Liquid storage rooms and rooms for flammable or combustible liquid use in closed systems. Liquid storage rooms and rooms for flammable or combustible liquid use in closed systems. Liquid storage rooms and rooms for flammable or combustible liquid use in closed systems, where no vapors are emitted, having a floor area of not more than 1,000 square feet (93 m²) need not be located on the outer perimeter where they are in accordance with the International Fire Code and NFPA 30.</p> <p>507.8.1.1.1 Liquid use, dispensing and mixing rooms and rRooms for flammable or combustible liquid use, dispensing or mixing in open systems. Liquid use, dispensing and mixing rooms and rRooms for flammable or combustible liquid use, dispensing or mixing in open systems, where vapors are emitted, and having a floor area of not more than 500 square feet (46.5 m²) need not be located on the outer perimeter of the building where they are in accordance with the International Fire Code and NFPA 30.</p>		X		Clarification	

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	507.8.1.1.2 Liquid storage rooms and rooms for flammable or combustible liquid use in closed systems. Liquid storage rooms and rooms for flammable or combustible liquid use in closed systems, where no vapors are emitted , having a floor area of not more than 1,000 square feet (93 m ²) need not be located on the outer perimeter where they are in accordance with the International Fire Code and NFPA 30.					
G52-18	<p>[F] 415.11.3.5415.11.4 Emergency alarm system. Emergency alarm systems shall be provided in accordance with this section and Sections 415.5.1 and 415.5.2415.5.2. The maximum allowable quantity per control area provisions shall not apply to emergency alarm systems required for HPM.</p> <p>[F] 415.11.3.5.1415.11.4.1 Service corridors. An emergency alarm system shall be provided in service corridors, with not fewer than one alarm device in each service corridor.</p> <p>[F] 415.11.3.5.2415.11.4.2 Corridors and interior exit stairways and ramps. Emergency alarms for corridors, interior exit stairways and ramps and exit passageways shall comply with Section 415.5.2 415.5.2.</p> <p>[F] 415.11.3.5.3415.11.4.3 Liquid storage rooms, HPM rooms and gas rooms. Emergency alarms for liquid storage rooms, HPM rooms and gas rooms shall comply with Section 415.5.1415.5.1.</p> <p>[F] 415.11.3.5.4415.11.4.4 Alarm-initiating devices. An approved emergency telephone system, local alarm manual pull stations, or other approved alarm-initiating devices are allowed to be used as emergency alarm-initiating devices.</p> <p>[F] 415.11.3.5.5415.11.4.5 Alarm signals. Activation of the emergency alarm system shall sound a local alarm and transmit a signal to the emergency control station.</p>		X			Clarification
G55-18	<p>Revise as follows:</p> <p>420.7 Group I-1 assisted living housing units. In Group I-1 occupancies, where a fire-resistance corridor is provided in areas where assisted living residents are housed, shared living spaces, group meeting or multipurpose therapeutic spaces open to the corridor shall be in accordance with all of the following criteria:</p> <ol style="list-style-type: none"> 1. The walls and ceilings of the space are constructed as required for corridors. 2. The spaces are not occupied as resident sleeping rooms, treatment rooms, incidental uses in accordance with Section 509, or hazardous uses. 3. The open space is protected by an automatic fire detection system installed in accordance with Section 907. 4. In Group I-1, Condition 1, the corridors onto which the spaces open are protected by an automatic fire detection system installed in accordance with Section 907, or the spaces are equipped throughout with quick-response sprinklers in accordance with Section 903.3.2. 5. In Group I-1, Condition 2, the corridors onto which the spaces open, in the same smoke compartment, are protected by an automatic fire detection system installed in accordance with Section 907, or the smoke compartment in which the spaces are located is equipped throughout with quick-response sprinklers in accordance with Section 903.3.2. 6. The space is arranged so as not to obstruct access to the required exits. 		X			Provides consistency with similar provisions addressing Group I-2 occupancies and provides more consistency with federal standards.

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>420.8 Group I-1 cooking facilities. In Group I-1 occupancies, rooms or spaces that contain a <u>cooking facilities facility</u> with domestic cooking appliances shall be in accordance with <u>be permitted to be open to the corridor where</u> all of the following criteria <u>are met</u>:</p> <ol style="list-style-type: none"> 1. In Group I-1, Condition 1 occupancies, the number of care recipients served by one cooking facility shall not be greater than 30. 2. In Group I-1, Condition 2 occupancies, the number of care recipients served by one cooking facility and within the same smoke compartment shall not be greater than 30. 3. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves. 4. The space containing the domestic cooking facilities shall be arranged so as not to obstruct access to the required exit. 5. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops or ranges. The cooking appliances shall comply with Section 420.9. 6. Cooktops and ranges shall be protected in accordance with Section 904.13. 7. A shutoff for the fuel and electrical supply to the cooking equipment shall be provided in a location that is accessible only to staff. 8. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes. 9. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance. <p>420.8.1 Cooking facilities open to the corridor. Cooking facilities located in a room or space open to a corridor, aisle or common space shall comply with Section 420.8.</p> <p>420.9 Domestic cooking appliances. In Group I-1 occupancies, installation of cooking appliance used in <u>domestic cooking facilities shall comply with all of the following</u>:</p> <ol style="list-style-type: none"> 1. <u>The types of cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves.</u> 2. <u>Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops or ranges.</u> 3. <u>Cooktops and ranges shall be protected in accordance with Section 904.13.</u> 4. <u>A shutoff for the fuel and electrical supply to the cooking equipment shall be provided in a location that is accessible only to staff.</u> 5. <u>A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.</u> 6. <u>A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.</u> 					

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Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>Revise 2018 International Fire Code as follows:</p> <p>904.13 Domestic cooking systems, facilities. Cooktops and ranges installed in the following occupancies shall be protected in accordance with Section 904.13.1:</p> <ol style="list-style-type: none"> In Group I-1 occupancies where domestic cooking facilities are installed in accordance with Section 420.8 420.9 of the International Building Code. In Group I-2, Condition 1 occupancies where domestic cooking facilities are installed in accordance with Section 407.2.6 of the International Building Code. In Group R-2 college dormitories where domestic cooking facilities are installed in accordance with Section 420.10 of the International Building Code. 					
G56-18	<p>2018 International Building Code</p> <p>420.8 Group I-1 cooking facilities. In Group I-1 occupancies, rooms or spaces that contain cooking facilities with domestic cooking appliances shall be in accordance with all of the following criteria:</p> <ol style="list-style-type: none"> In Group I-1, Condition 1 occupancies, the number of care recipients served by one cooking facility shall not be greater than 30. In Group I-1, Condition 2 occupancies, the number of care recipients served by one cooking facility and within the same smoke compartment shall not be greater than 30. The types of domestic cooking appliances permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves. The space containing the domestic cooking facilities shall be arranged so as not to obstruct access to the required exit. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Codes shall be provided over cooktops or ranges. Cooktops and ranges shall be protected in accordance with Section 904.13. A shutoff for the fuel and electrical supply to the cooking equipment shall be provided in a location that is accessible only to staff. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance. <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Cooking facilities provided within care recipient's individual dwelling units are not required to comply with this section.</u> <u>Cooktops and ranges used for care recipient training or nutritional counseling are not required to comply with Item 6 of this section.</u> 		X			Clarification
G58-18	<p>Revise as follows:</p> <p>422.1 General. Occupancies classified as <i>ambulatory care facilities</i> shall comply with the provisions of Sections 422.1 through 422.6 422.7 and other applicable provisions of this code.</p> <p>422.7 Domestic cooking. Installation of cooking appliances used in domestic cooking facilities shall comply with all of the following:</p>			X	Minimal	Updated based federal health care standards

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<ol style="list-style-type: none"> 1. <u>The types of cooking appliances permitted are limited to ovens, cooktops, ranges, warmers and microwaves</u> 2. <u>Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops or ranges.</u> 3. <u>A shutoff for the fuel and electrical supply to the cooking equipment shall be provided in a location that is accessible only to staff.</u> 4. <u>A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.</u> 5. <u>A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot (9144 mm) distance of travel from each domestic cooking appliance.</u> 					
G59-18	<p>Revise as follows:</p> <p>423.1 General. This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as rooms or spaces within buildings for the purpose of providing protection from storms that produce high winds, such as tornadoes and hurricanes during the storm. Such structures shall be designated to be hurricane shelters, tornado shelters, or combined hurricane and tornado. <u>This section specifies where storm shelters are required and provides requirements for the design and construction of storm shelters. Design of facilities for use as emergency shelters after the storm are outside the scope of ICC 500 and shall comply with Table 1604.5 as a Risk Category IV Structure.</u></p> <p>423.2 Construction. In addition to other applicable requirements in this code, storm <u>Storm shelters shall be constructed in accordance with ICC 500, this code and ICC 500, and shall be designated as hurricane shelters, tornado shelters, or combined hurricane and tornado shelters.</u> Buildings or structures that are also designated as emergency shelters shall also comply with Table 1604.5 as Risk Category IV structures. <u>Any storm shelter not required by this section shall be permitted to be constructed provided such structures meet the requirements of this code and ICC 500.</u></p> <p>423.3 Occupancy classification. <u>The occupancy classification for a storm shelter shall be determined in accordance with this section.</u></p> <p>423.3.1 Dedicated storm shelters. <u>A facility designed to be occupied solely as a storm shelter shall be classified as Group A-3 for the determination of requirements other than those covered in ICC 500.</u></p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <u>The occupancy category for dedicated storm shelters with an occupant load of less than 50 persons as determined in accordance with ICC 500 shall be in accordance with Section 303.</u> 2. <u>The occupancy category for a dedicated residential storm shelter shall be the Group R occupancy served.</u> <p>423.3.2 Storm shelters within host buildings. <u>Where designated storm shelters are constructed as a room or space within a host building which will normally be occupied for other purposes, the requirements of this code for the occupancy of the building,</u></p>		X		Improves the coordination between the code and the storm shelter standard	

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	or the individual rooms or spaces thereof, shall apply unless otherwise required by ICC <u>500.</u>					
G90-18	<p>Revise as follows:</p> <p style="text-align: center;">SECTION 419 LIVE/WORK UNITS</p> <p>508.1 General. Each portion of a building shall be individually classified in accordance with Section Where a building contains more than one occupancy group, the building or portion thereof shall comply with the applicable provisions of Section 508.2, 508.3 or, 508.4, <u>508.5</u>, or a combination of these sections.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Occupancies separated in accordance with Section 510. Where required by Table 415.6.2, areas of Group H-1, H-2 and H-3 occupancies shall be located in a detached building or structure. Uses within live/work units, complying with Section 419, are not considered separate occupancies. <p>419.1 508.5 General Live/Work Units. A live/work unit shall comply with Sections 419.1-508.5 through 419.9-508.5.11.</p> <p>Exception: Dwelling or sleeping units that include an office that is less than 10 percent of the area of the dwelling unit are permitted to be classified as dwelling units with accessory occupancies in accordance with Section 508.2.</p> <p>419.1.1 508.5.1 Limitations. All of the following shall apply to live/work areas:</p> <ol style="list-style-type: none"> The live/work unit is permitted to be not greater than 3,000 square feet (279 m²) in area. The nonresidential area is permitted to be not more than 50 percent of the area of each live/work unit. The nonresidential area function shall be limited to the first or main floor only of the live/work unit. Not more than five nonresidential workers or employees are allowed to occupy the nonresidential area at any one time. <p>419.2 508.5.2 Occupancies. Live/work units shall be classified as a Group R-2 occupancy. Separation requirements found in Sections 420 and 508 shall not apply within the live/work unit where the live/work unit is in compliance with Section 419-508.5. Nonresidential uses that would otherwise be classified as either a Group H or S occupancy shall not be permitted in a live/work unit.</p> <p>Exception: Storage shall be permitted in the live/work unit provided that the aggregate area of storage in the nonresidential portion of the live/work unit shall be limited to 10 percent of the space dedicated to nonresidential activities.</p> <p>419.3 508.5.3 Means of egress. Except as modified by this section, the means of egress components for a live/work unit shall be designed in accordance with Chapter 10 for the function served.</p> <p>419.3.1 508.5.4 Egress capacity. The egress capacity for each element of the live/work unit shall be based on the occupant load for the function served in</p>	X			Minimal	Provides clearer description under Mixed Use Occupancies since the unit is not only residential nor business use.

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CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>accordance with Table 1004.5.</p> <p>419.3.2 508.5.5 Spiral stairways. Spiral stairways that conform to the requirements of Section 1011.10 shall be permitted.</p> <p>419.4 508.5.6 Vertical openings. Floor openings between floor levels of a live/work unit are permitted without enclosure.</p> <p>[F] 419.5 508.5.7 Fire protection. The live/work unit shall be provided with a monitored fire alarm system where required by Section 907.2.9 and an automatic sprinkler system in accordance with Section 903.2.8.</p> <p>419.6 508.5.8 Structural. Floors within a live/work unit shall be designed for the live loads in Table 1607.1, based on the function within the space.</p> <p>419.7 508.5.9 Accessibility. Accessibility shall be designed in accordance with Chapter 11 for the function served.</p> <p>419.8 508.5.10 Ventilation. The applicable ventilation requirements of the International Mechanical Code shall apply to each area within the live/work unit for the function within that space.</p> <p>419.9 508.5.11 Plumbing facilities. The nonresidential area of the live/work unit shall be provided with minimum plumbing facilities as specified by Chapter 29, based on the function of the nonresidential area. Where the nonresidential area of the live/work unit is required to be accessible by Section 1107.6.2.1, the plumbing fixtures specified by Chapter 29 shall be accessible.</p>					
G92-18	<p>Eliminates stationary storage battery systems as incidental use from Table 509. A rewrite of the IFC Section 1206 has added extensive protection features to such installations including detection, suppression, fire separation, and explosion control, along with large scale testing to document the effectiveness of chosen protection levels. With the increased level of protection mandated by the IFC, there is no longer a need to limit such uses to 10% of a floor area as an incidental use.</p> <p>This proposal is submitted by the ICC Building Code Action Committee (BCAC). BCAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned International Codes or portions thereof. In 2017 the BCAC has held 3 open meetings. In addition, there were numerous Working Group meetings and conference calls for the current code development cycle, which included members of the committee as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: https://www.iccsafe.org/codes-tech-support/codes/code-development-process/building-code-action-committee-bcac.</p>	X			Minimal	Eliminates the incidental use 10% floor area restriction which can reduce the cost of providing energy storage systems in mixed use buildings.
G132-18	<p>Revise as follows:</p> <p>[P] 1209.3 Privacy. <u>Public restrooms shall be visually screened from outside entry or exit doorways to ensure user privacy within the restroom. This provision shall also apply where mirrors would compromise personal privacy.</u> Privacy at water closets and urinals shall be provided in accordance with Sections 1209.3.1 and 1209.3.2.</p> <p>Exception: <u>Visual screening shall not be required for single-occupant toilet rooms with a lockable door.</u></p>		X			Clarification

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		Decrease	None	Increase		
Sub Code:						
G133-18	<p>Modify as follows:</p> <p style="text-align: center;">[P] 2903 INSTALLATION OF FIXTURES</p> <p>[P] 2903.1 Setting. Fixtures shall be set level and in proper alignment with reference to adjacent walls.</p> <p>[P] 2903.1.1 Water closets, urinals, lavatories and bidets. A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction. Where partitions or other obstructions do not separate adjacent fixtures, fixtures shall not be set closer than 30 inches (762 mm) center to center between adjacent fixtures.</p> <p>There shall be not less than a 21-inch (533 mm) clearance in front of a water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762 mm) in width and not less than 60 inches (1524 mm) in depth for floor-mounted water closets and not less than 30 inches (762 mm) in width and 56 inches (1422 mm) in depth for wall- hung water closets.</p> <p>Exception: An accessible children's water closet shall be set not closer than 12 inches (305 mm) from its center to the required partition or to the wall on one side.</p> <p>[P] 2903.1.2 Public Lavatories. In employee and public toilet rooms, the required lavatory shall be located in the same room as the required water closet.</p> <p>[P] 2903.1.3 Location of fixtures and piping. Piping, fixtures or equipment shall not be located in such a manner as to interfere with the normal operation of windows, doors or other means of egress openings.</p> <p>[P] 2903.1.4 Water closet compartment. Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door. 2. Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment. 3. This provision is not applicable to toilet areas located within Group I-3 housing areas. <p>[P] 2903.1.5 Urinal Partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152</p>		X			Clarification

Table 2. 2021 IEBC Changes Cost Impact

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		Decrease	None	Increase		
	<p>mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <u>Urinal partitions shall not be required in a single-occupant or family/assisted-use toilet room with a lockable door.</u> 2. <u>Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.</u> 					
G148-18	<p>Revise as follows:</p> <p>3111.1.1 Wind resistance. Rooftop-mounted photovoltaic panels and modules (PV) panel systems and solar thermal collectors shall be designed in accordance with Section 1609.</p> <p>3111.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Section 2606.12 <u>this section</u>, the International Plumbing Code, the International Mechanical Code and the International Fire Code. <u>Where light-transmitting plastic covers are used, solar thermal collectors shall be designed in accordance with Section 2606.12.</u></p> <p>Fire classification. Rooftop-mounted photovoltaic (PV) panel systems shall have a fire classification in accordance with Section 1505.9. Building-integrated photovoltaic systems-BIPV systems <u>installed as the roof covering shall have a fire classification in accordance with Section 1505.8.</u></p> <p>Building-integrated photovoltaic (BIPV) systems. Building-integrated photovoltaic systems that serve as roof coverings-BIPV systems <u>installed as the roof covering shall be designed and installed in accordance with Section 1507.18 1507.</u></p>		X			Clarification
G149-18	<p>Modify as follows:</p> <p>3101.1 Scope. The provisions of this chapter shall govern special building construction including membrane structures, temporary structures, pedestrian walkways and tunnels, automatic vehicular gates, awnings and canopies, marquees, signs, towers, antennas, relocatable buildings, swimming pool enclosures and safety devices, and solar energy systems, and public use restroom buildings <u>on publicly owned lands in flood hazard areas.</u></p> <p style="text-align: center;">SECTION 3112 3114</p> <p style="text-align: center;">PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS</p> <p>3112-3114.1 3114.1 General. Public use restroom buildings that contain toilet rooms, bathrooms, showers and changing rooms, and those portions of buildings that contain <u>For the purpose of this section, public restroom buildings are located on publicly owned lands in flood hazard areas and intended for public use. Public restroom buildings and portions of other buildings that contain public restrooms, are limited to toilet rooms, bathrooms, showers and changing rooms, and where such</u> <u>Public restroom buildings and portions of buildings are intended for public use and located on publicly owned lands in flood hazard areas, that contain public restrooms</u> shall comply with the requirements of this section. Public use restrooms that are not elevated or dry floodproofed in accordance with Section 1612 shall comply with</p>	X			Minimal	Clarification

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CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>Section 3112-3114.2. Portions of buildings that include uses other than public use toilet rooms, bathrooms, showers and changing rooms shall comply with Section 1612.</p> <p>3114.2 Flood resistance. Public use restrooms that are located on publicly owned lands in flood hazard areas shall comply with the requirements of ASCE 24, except for elevation requirements, and shall comply with all of the following criteria:</p> <ol style="list-style-type: none"> 1. The building footprint is not more than 1,500 square feet. 2. Located, designed and constructed to resist the effects of flood hazards and flood loads to minimize flood damage from a combination of wind and water loads associated with the base flood. 3. Anchored to prevent flotation, collapse or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy during conditions of the base flood. 4. Constructed of flood damage-resistant materials. 5. Where enclosed by walls, the walls have flood openings. 6. Mechanical and electrical systems are located above the base flood elevation. 7. Plumbing fixtures and plumbing connections are located above the base flood elevation. 8. An emergency plan, approved by the jurisdiction, is submitted to the building official where the building design specifies <u>documents specify</u> implementation of protection measures prior to the onset of flooding conditions. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Minimum <u>necessary electric service equipment</u> required to address <u>health, life safety and electric code requirements</u> is permitted below the base flood <u>elevation in accordance with ASCE 24 provisions for electric elements installed below the minimum elevations.</u> 2. Plumbing fixtures and connections are permitted below the base flood elevation provided the fixtures and connections are designed and installed to minimize or eliminate infiltration of floodwaters into the sanitary sewage system and discharges from sanitary sewage systems into floodwaters. 					
S1-18	<p>Revise as follows:</p> <p>[P] 1502.1 General. Design and installation of roof drainage systems shall comply with <u>this Section and Section 1502-1611</u> of this code and Sections 1106 and 1108, as applicable, and Chapter 11 of the International Plumbing Code.</p> <p>[P] 1502.2 Secondary (emergency overflow) drains or scuppers. Where roof drains are required, secondary (emergency overflow) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. The installation and sizing of secondary emergency overflow drains, leaders and conductors shall comply with Sections 1106 and 1108, as applicable, Section 1611 of this code and Chapter 11 of the International Plumbing Code.</p>		X			Clarification
S3-18	<p>Revise as follows:</p> <p>[BF] 1505.8 Building-integrated photovoltaic (BIPV) products. Building-integrated photovoltaic BIPV products installed as the roof covering shall be tested, listed and labeled for fire classification in accordance with Section 1505.1.</p>		X			Clarification

Table 2. 2021 IEBC Changes Cost Impact

CODE CHANGE #	2021 IEBC CHANGE SUMMARY	IEBC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	[BF] 1505.9 Rooftop-mounted photovoltaic (PV) panel systems. Rooftop rack-mounted photovoltaic (PV) panel systems shall be tested, listed and identified with a fire classification in accordance with UL 1703 and UL 2703. The fire classification shall comply with Table 1505.1 based on the type of construction of the building.					
S4-18	Modify as follows: Roof top mounted photovoltaic panel systems. Rooftop rack-mounted photovoltaic panel systems shall be tested, listed and identified with a fire classification in accordance with UL 1703 and UL 2703. Listed systems shall include roof mounting hardware. Listed systems shall be installed in accordance with the manufacturer's installation instructions and its listing. The fire classification shall comply with Table 1505.1 based on the type of construction of the building.			X	Minimal	Clarification
S9-18	Revise as follows: [BF] 1508.1 General. The use of above-deck thermal insulation shall be permitted provided that such insulation is covered with an approved roof covering and passes the tests of NFPA 276 or UL 1256 when tested as an assembly. Exceptions: 1. Foam plastic roof insulation shall conform to the material and installation requirements of Chapter 26. 2. Where a concrete or composite metal and concrete roof deck is used and the above-deck thermal insulation is covered with an approved roof covering.		X			Clarification
S13-18	[BG] 1510.7 Photovoltaic panels and modules. Rooftop-mounted photovoltaic panels and modules shall be designed in accordance with this section. [BG] 1510.7.1 Fire classification. Rooftop-mounted photovoltaic panels and modules shall have the fire classification in accordance with Section 1505.9. [BG] 1510.7.2 Photovoltaic panels and modules. Rooftop-mounted photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703 and shall be installed in accordance with the manufacturer's instructions. SECTION 1512 PHOTOVOLTAIC PANELS AND MODULES 1512.1 Photovoltaic panels and modules. Photovoltaic panels and modules installed on a roof or as an integral part of a roof assembly shall comply with the requirements of this code and the International Fire Code.		X			Removes an unnecessary definition.

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APPENDIX C

Table3. 2021 IFGC Changes Cost Impact						
CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
FG2-18	Add new definition for SERVICE METER ASSEMBLY as follows: <u>SERVICE METER ASSEMBLY.</u> The meter, valve, regulator, piping, fittings and equipment installed by <u>the service gas supplier before the point of delivery.</u>		X			Necessary addition for clarification
FG3-18	Add new definition for SYSTEM SHUTOFF as follows: <u>SYSTEM SHUTOFF. A valve installed after the point of delivery to shut off the entire piping system.</u>		X			Necessary addition for clarification
FG4-18	Change existing definition for VALVE to: VALVE. A device used in piping to control the gas supply to any section of a system of piping or to an appliance. <u>Service Shutoff.</u> A valve, installed by the serving gas supplier between the source of supply and <u>the point of delivery, to shut off the entire piping system.</u>		X			Clarification
FG6-18	Change existing definition for REGULATOR, MONITORING to: REGULATOR, MONITORING. A pressure regulator set in series with another pressure regulator for the purpose of automatically taking control of the pressure downstream of the monitored regulator when that <u>pressure exceeds a set minimum preventing an overpressure in the downstream piping system.</u>		X			Clarification
FG7-18	Change existing definition for POINT OF DELIVERY to: POINT OF DELIVERY. For natural gas systems, the point of delivery is the outlet of the service meter assembly or the outlet of the service regulator or service shutoff valve where a meter is not provided. Where a <u>system shutoff valve is provided at after</u> the outlet of the service meter assembly, such valve shall be considered to be downstream of the point of delivery. For undiluted liquefied petroleum gas systems, the point of delivery shall be considered to be the outlet of the service pressure regulator, exclusive of line gas regulators, in the system.		X			Clarification
FG8-18	Add new definition for PRESS-CONNECT JOINT as follows: <u>PRESS-CONNECT JOINT.</u> A permanent mechanical joint incorporating an elastomeric seal or an <u>elastomeric seal and corrosion-resistant grip or bite ring.</u> The joint is made with a <u>pressing tool and jaw or ring approved by the fitting manufacturer.</u>		X			Necessary addition for clarification
FG11-18	Change existing definition for 307.2 Fuel-burning appliances to: 307.2 Fuel-burning appliances. Liquid combustion byproducts of condensing appliances shall be collected and discharged to an approved plumbing fixture or disposal area in accordance with the manufacturer's instructions. Condensate piping shall be of approved corrosion-resistant		X			Clarification

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Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	material and shall be not smaller than the drain connection on the appliance. Such piping shall maintain a minimum slope in the direction of discharge of not less than one-eighth unit vertical in 12 units horizontal (1-percent slope). Where condensate piping is concealed, and the primary and secondary drain system pipes serving the same appliance terminate together at a remote location, the terminations shall be identified as to which is the primary or secondary drain. The termination of concealed condensate piping shall be marked to indicate that the piping is connected to the primary drain or to the secondary drain.					
FG12-18	Change existing definition for 401.5 Identification to: 401.5 Identification. For other than steel pipe and CSST, exposed piping shall be identified by a yellow label marked "Gas" in black letters. The marking shall be spaced at intervals not exceeding 5 feet (1524 mm). The marking shall not be required on pipe piping located in the same room as the appliance served. CSST shall be identified as required by ANSI LC 1/CSA 6.26.	X			Minimal	Clarification
FG14-18	Change existing definition for 404.5 Fittings in concealed locations to: 404.5 Fittings in concealed locations. Fittings installed in concealed locations shall be limited to the following types: <ol style="list-style-type: none"> 1. Threaded Right-handed threaded threaded elbows, tees, couplings, plugs and caps. 2. Brazed fittings. 3. Welded fittings. 4. Fittings listed to ANSI LC-1/CSA 6.26 or ANSI LC-4. 		X			Clarification
FG17-18	Delete the existing definition for 404.11.5 Prohibited use.		X			Clarification
FG18-18	Change the existing definition for 404.18 Pipe cleaning to: 404.18 Pipe cleaning-debris removal. The interior of piping shall be clear of debris. The use of a flammable or combustible gas to clean or remove debris from a piping system shall be prohibited.		X			Clarification
FG21-18	Change existing definition for 411.1 Connecting appliances to: 411.1 Connecting appliances. Except as required by Section 411.1.1, appliances shall be connected to the piping system by one of the following: <ol style="list-style-type: none"> 1. Rigid metallic pipe and fittings. 2. Corrugated stainless steel tubing (CSST) where installed in accordance with the manufacturer's instructions. 3. Semirigid metallic tubing and metallic fittings. Lengths shall not exceed 6 feet (1829 mm) and shall be located entirely in the same room as the 		X			Clarification

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Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><i>appliance</i>. Semirigid metallic tubing shall not enter a motor-operated <i>appliance</i> through an unprotected knockout opening.</p> <p>4. <i>Listed</i> and labeled appliance connectors in compliance with ANSI Z21.24/CGA 6.10 and installed in accordance with the manufacturer's instructions and located entirely in the same room as the appliance.</p> <p>5. <i>Listed</i> and <i>labeled</i> quick-disconnect devices <u>in compliance with ANSI Z21.41/CGA 6.9</u> used in conjunction with <i>listed</i> and labeled appliance connectors.</p> <p>6. <i>Listed</i> and <i>labeled</i> convenience outlets <u>in compliance with ANSI Z21.90/CGA 6.24</u> used in conjunction with <i>listed</i> and labeled appliance connectors.</p> <p>7. <i>Listed</i> and <i>labeled</i> outdoor <i>appliance</i> connectors in compliance with ANSI Z21.75/CSA 6.27 and installed in accordance with the manufacturer's instructions.</p> <p>8. <i>Listed</i> outdoor gas hose connectors in compliance with ANSI Z21.54 used to connect portable outdoor appliances. The gas hose connection shall be made only in the outdoor area where the appliance is used, and shall be to the <i>gas piping</i> supply at an appliance shutoff valve, a <i>listed</i> quick-disconnect device or <i>listed</i> gas convenience outlet.</p> <p>9. Gas hose connectors for use in laboratories and educational facilities in accordance with Section 411.4.</p> <p style="text-align: center;">CHAPTER 8 REFERENCED STANDARDS</p> <p style="text-align: center;">Add new standards for ANSI Z21.41/CSA 6.9-2014 and ANSI Z21.90/CSA 6.24-2015 as follows:</p> <p>ANSI <u>ANSI Z21.41/CSA 6.9-2014:</u> <u>Quick disconnect devices for use with gas fuel appliances</u></p> <p><u>ANSI Z21.90/CSA 6.24-2015:</u> <u>Gas convenience outlets and optional enclosures</u></p>					
FG22-18	Change the existing definition for SECTION 413 (IFGC) [F] 413.2.3 General, [F] 413.4 Residential fueling appliance installation, [F] 413.5 Private fueling of motor vehicles, [F] 413.6 Pressure regulators, [F] 413.7 Valves, [F] 413.8 Emergency shutdown control, [F] 413.9 Discharge of CNG from motor vehicle fuel storage containers, [F] 413.9.1 Closed transfer		X			Clarification

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Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>system, [F] 413.9.2 Atmospheric venting, [F] 413.9.2.1 Plans and specifications, [F] 413.9.2.2 Cylinder stability, [F] 413.9.2.3 Separation, [F] TABLE 413.9.2.3 SEPARATION DISTANCE FOR ATMOSPHERIC VENTING OF CNG, [F] 413.9.2.4 Grounding and bonding, [F] 413.9.2.5 Vent tube and [F] 413.9.2.6 Signage to:</p> <p>[F] 413.2.3 General Residential Fueling Appliances. Residential fueling appliances shall be in accordance with Section 413.4 listed to CSA/ANSI NGV 5.1. The capacity of a residential fueling appliance (RFA) shall not exceed 5 standard cubic feet per minute (0.14 standard cubic meter/min) of natural gas.</p> <p>[F] 413.4 Residential fueling appliance installation. Residential fueling appliances shall be installed in accordance with Sections 413.4.1 through 413.4.3 requirements of CSA/ANSI NGV 5.1, manufacturer installation instructions, and Section 2308 of the International Fire Code for RFAs.</p> <p>[F] 413.5-413.6 Private fueling of motor vehicles. Self-service CNG-dispensing systems, including key, code and card lock dispensing systems, shall be limited to the filling of permanently mounted fuel containers on CNG-powered vehicles.</p> <p>[F] 413.6-413.7 Pressure regulators. Pressure regulators shall be designed, installed or protected so their operation will not be affected by the elements (freezing rain, sleet, snow, ice, mud or debris). This protection is allowed to be integral with the regulator.</p> <p>[F] 413.7-413.8 Valves. <i>Piping to equipment</i> shall be provided with a remote manual shutoff valve. Such valve shall be provided with ready access.</p> <p>[F] 413.8-413.9 Emergency shutdown control. An emergency shutdown device shall be located within 75 feet (22 860 mm) of, but not less than 25 feet (7620 mm) from, dispensers and shall also be provided in the compressor area. Upon activation, the emergency shutdown system shall automatically shut off the power supply to the compressor and close valves between the main gas supply and the compressor and between the storage containers and dispensers.</p> <p>[F] 413.9-413.10 Discharge of CNG from motor vehicle fuel storage containers. The discharge of CNG from motor vehicle fuel cylinders for the purposes of maintenance, cylinder certification, calibration of dispensers or other activities shall be in accordance with this section. The discharge of CNG from motor vehicle fuel cylinders shall be accomplished through a closed transfer system or an <i>approved</i> method of atmospheric venting in accordance with Section 413.9.1 or 413.9.2.</p>					

Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[F] 413.9.1 <u>413.10.1</u> Closed transfer system. A documented procedure that explains the logical sequence for discharging the cylinder shall be provided to the code official for review and approval. The procedure shall include what actions the operator will take in the event of a low-pressure or high-pressure natural gas release during the discharging activity. A drawing illustrating the arrangement of <i>pipng</i>, regulators and <i>equipment</i> settings shall be provided to the code official for review and approval. The drawing shall illustrate the <i>pipng</i> and regulator arrangement and shall be shown in spatial relation to the location of the compressor, storage vessels and emergency shutdown devices.</p> <p>[F] 413.9.2 <u>413.10.2</u> Atmospheric venting. Atmospheric venting of motor vehicle fuel cylinders shall be in accordance with Sections 413.9.2.1 through 413.9.2.6.</p> <p>[F] 413.9.2.1 <u>413.10.2.1</u> Plans and specifications. A drawing illustrating the location of the vessel support, <i>pipng</i>, the method of grounding and bonding, and other requirements specified herein shall be provided to the code official for review and approval.</p> <p>[F] 413.9.2.2 <u>413.10.2.2</u> Cylinder stability. A method of rigidly supporting the vessel during the venting of CNG shall be provided. The selected method shall provide not less than two points of support and shall prevent horizontal and lateral movement of the vessel. The system shall be designed to prevent movement of the vessel based on the highest gas-release velocity through valve orifices at the vessel's rated pressure and volume. The structure or appurtenance shall be constructed of <i>noncombustible materials</i>.</p> <p>[F] 413.9.2.3 <u>413.10.2.3</u> Separation. The structure or appurtenance used for stabilizing the cylinder shall be separated from the site <i>equipment</i>, features and exposures and shall be located in accordance with Table 413.9.2.3.</p> <p style="text-align: center;">[F] TABLE 413.9.2.3 <u>413.10.2.3</u></p> <p style="text-align: center;">SEPARATION DISTANCE FOR ATMOSPHERIC VENTING OF CNG</p> <p>[F] 413.9.2.4 <u>413.10.2.4</u> Grounding and bonding. The structure or appurtenance used for supporting the cylinder shall be grounded in accordance with NFPA 70. The cylinder valve shall be bonded prior to the commencement of venting operations.</p> <p>[F] 413.9.2.5 <u>413.10.2.5</u> Vent tube. A vent tube that will divert the gas flow to the atmosphere shall be installed on the cylinder prior to the commencement of the venting and purging operation. The vent tube shall be constructed of pipe or tubing materials <i>approved</i> for use with CNG in accordance with the International Fire Code.</p>					

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Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[F] 413.9.2.6-413.10.2.6 Signage. Approved NO SMOKING signs shall be posted within 10 feet (3048 mm) of the cylinder support structure or appurtenance. <i>Approved</i> CYLINDER SHALL BE BONDED signs shall be posted on the cylinder support structure or appurtenance.</p> <p>Add new definition for 413.2.4 Non-residential fueling appliances, and 413.5 Non-residential fueling appliance installation as follows:</p> <p>413.2.4 Non-residential fueling appliances. Non-residential fueling appliances shall be listed to CSA/ANSI NGV 5.2. The capacity of a non-residential fueling appliance, listed to that standard as a vehicle fueling appliance (VFA), shall not exceed 10 standard cubic feet per minute (0.28 standard cubic meter/min) of natural gas.</p> <p>413.5 Non-residential fueling appliance installation. Non-residential fueling appliances shall be installed in accordance with requirements for vehicle fueling appliances (VFA) in CSA/ANSI NGV 5.2, manufacturer installation instructions, and Section 2308 of the International Fire Code for VFAs.</p> <p>Delete the existing definition for [F] 413.4.1 Listing and installation, [F] 413.4.2 Gas connection, and [F] 413.4.3 Indoor installation.</p> <p>Update standards for CSA/ANSI NGV 5.1-2016 and 5.2-2017.</p>					
FG23-18	<p>Change existing definition for 602.1 General, 602.2 Flame safeguard device, 603.1 General, 604.1 General, 605.1 General, 608.1 General, 609.1 General, 610.1 General, 613.1 General, 617.1 General, 618.1 General, 620.1 General, 621.1 General, 622.1 General, 623.1 Cooking appliances, 624.1 General, 625.1 General, 626.1 General, 627.1 General, 628.1 General, 630.1 General, and 636.1 General to:</p> <p>602.1 General. Decorative appliances for installation in <i>approved</i> solid fuel-burning fireplaces shall be tested-listed in accordance with ANSI Z21.60/CSA 6.26 and shall be installed in accordance with the manufacturer's instructions. Manually lighted natural gas decorative appliances shall be tested-listed in accordance with ANSI Z21.84.</p> <p>602.2 Flame safeguard device. Decorative appliances for installation in approved solid fuel-burning fireplaces, with the exception of those tested-listed in accordance with ANSI Z21.84, shall utilize a direct ignition device, an ignitor or a pilot flame to ignite the fuel at the main burner, and shall be equipped with a flame safeguard device. The flame safeguard device shall automatically shut off the fuel supply to a main burner or group</p>		X			Clarification

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Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>of burners when the means of ignition of such burners becomes inoperative.</p> <p>603.1 General. Log lighters shall be tested<u>listed</u> in accordance with CSA 8 and installed in accordance with the manufacturer's instructions.</p> <p>604.1 General. Vented gas fireplaces shall be tested<u>listed</u> in accordance with ANSI Z21.50/CSA 2.22, shall be installed in accordance with the manufacturer's instructions and shall be designed and equipped as specified in Section 602.2.</p> <p>605.1 General. Vented gas fireplace heaters shall be installed in accordance with the manufacturer's instructions, shall be tested<u>listed</u> in accordance with ANSI Z21.88/CSA 2.33 and shall be designed and equipped as specified in Section 602.2.</p> <p>608.1 General. Vented wall furnaces shall be tested<u>listed</u> in accordance with ANSI Z21.86/CSA 2.32 and shall be installed in accordance with the manufacturer's instructions.</p> <p>609.1 General. Floor furnaces shall be tested<u>listed</u> in accordance with ANSI Z21.86/CSA 2.32 and shall be installed in accordance with the manufacturer's instructions.</p> <p>610.1 General. Duct furnaces shall be tested<u>listed</u> in accordance with ANSI Z83.8/CSA 2.6 or UL 795 and shall be installed in accordance with the manufacturer's instructions.</p> <p>613.1 General. Clothes dryers shall be tested<u>listed</u> in accordance with ANSI Z21.5.1/CSA 7.1 or ANSI Z21.5.2/CSA 7.2 and shall be installed in accordance with the manufacturer's instructions.</p> <p>617.1 General. Pool and spa heaters shall be tested<u>listed</u> in accordance with ANSI Z21.56/CSA 4.7 and shall be installed in accordance with the manufacturer's instructions.</p> <p>618.1 General. Forced-air warm-air furnaces shall be tested<u>listed</u> in accordance with ANSI Z21.47/CSA 2.3 or UL 795 and shall be installed in accordance with the manufacturer's instructions.</p> <p>620.1 General. Unit heaters shall be tested<u>listed</u> in accordance with ANSI Z83.8/CSA 2.6 and shall be installed in accordance with the manufacturer's instructions.</p> <p>621.1 General. Unvented room heaters shall be tested<u>listed</u> in accordance with ANSI Z21.11.2 and shall be installed in accordance with the conditions of the listing and the manufacturer's instructions. Unvented room heaters utilizing fuels other than fuel gas shall be regulated by the International Mechanical Code.</p> <p>622.1 General. Vented room heaters shall be tested<u>listed</u> in accordance with ANSI Z21.86/CSA 2.32, shall be designed and</p>					

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Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>equipped as specified in Section 602.2 and shall be installed in accordance with the manufacturer's instructions.</p> <p>623.1 Cooking appliances. Cooking appliances that are designed for permanent installation, including ranges, ovens, stoves, broilers, grills, fryers, griddles, hot plates and barbecues, shall be tested-listed in accordance with ANSI Z21.1, ANSI Z21.58/CSA 1.6 or ANSI Z83.11/CSA 1.8 and shall be installed in accordance with the manufacturer's instructions.</p> <p>624.1 General. Water heaters shall be tested-listed in accordance with ANSI Z21.10.1/CSA 4.1 and or ANSI Z21.10.3/CSA 4.3 and shall be installed in accordance with the manufacturer's instructions.</p> <p>625.1 General. Refrigerators shall be tested-listed in accordance with ANSI Z21.19/CSA 1.4 and shall be installed in accordance with the manufacturer's instructions.</p> <p>626.1 General. Gas-fired toilets shall be tested-listed in accordance with ANSI Z21.61 and installed in accordance with the manufacturer's instructions.</p> <p>627.1 General. Gas-fired air-conditioning appliances shall be tested-listed in accordance with ANSI Z21.40.1/CGA-CSA 2.91 or ANSI Z21.40.2/CGA-CSA 2.92 and shall be installed in accordance with the manufacturer's instructions.</p> <p>628.1 General. Illuminating appliances shall be tested-listed in accordance with ANSI Z21.42 and shall be installed in accordance with the manufacturer's instructions.</p> <p>630.1 General. Infrared radiant heaters shall be tested-listed in accordance with ANSI Z83.19 or Z83.20 and shall be installed in accordance with the manufacturer's instructions.</p> <p>636.1 General. Permanently fixed-in-place outdoor decorative appliances shall be tested-listed in accordance with ANSI Z21.97 and shall be installed in accordance with the manufacturer's instructions.</p>					
FG24-18	<p>Change existing definition for 611.2 Installation to:</p> <p>611.2 Installation. Nonrecirculating direct-fired industrial air heaters shall be installed only in industrial or commercial occupancies. Nonrecirculating direct-fired industrial air heaters shall be permitted to provide ventilation air.</p>		X			Clarification
FG25-18	<p>Change existing definition for 612.2 Location to:</p> <p>612.2 Location. Recirculating direct-fired industrial air heaters shall be installed only in industrial and commercial occupancies. Recirculating direct-fired air heaters shall not serve any area containing sleeping quarters. Recirculating direct-fired industrial air heaters shall not be installed in hazardous locations or in buildings that contain flammable solids, liquids or gases,</p>		X			Clarification

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Table3. 2021 IFGC Changes Cost Impact

CODE CHANGE #	2021 IFGC CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	explosive materials or substances that can become toxic when exposed to flame or heat.					
FG26-18	<p>Change existing definition for [M] 614.6 Makeup air to: [M] 614.6 Makeup air. Installations exhausting more than 200 cfm (0.09 m³/s) shall be provided with makeup air. Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 square inches (645 mm²) for makeup air shall be provided in the closet enclosure, or makeup air shall be provided by other approved means.</p> <p>Add new definition for [M] 614.6.1 Closet Installation as follows: [M]614.6.1 Closet Installation. <u>Where a closet is designed for the installation of a clothes dryer, an opening having an area of not less than 100 square inches (645 mm²) for makeup air shall be provided in the closet enclosure, or makeup air shall be provided by other approved means.</u></p>		X			Clarification
FG28-18	<p>Change existing definition for 623.2 Prohibited location to: 623.2 Prohibited location. Cooking appliances designed, tested, <i>listed</i> and <i>labeled</i> for use in commercial occupancies shall not be installed within dwelling units or within any area where domestic cooking operations occur.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Appliances that are also listed as domestic cooking appliances. 2. Where the installation is designed by a licensed Professional Engineer, in compliance with the manufacturer's installation instructions. 		X			Clarification

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APPENDIX D

Table 4. 2021 IMC Changes Cost Impact						
CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
M2-18	<p>Add new definition for INDIRECT EVAPORATIVE COOLING AND DIRECT EVAPORATIVE COOLING as follows:</p> <p><u>INDIRECT EVAPORATIVE COOLING.</u> The evaporative cooling process where water evaporates into a secondary air stream, removing heat from a primary air stream utilizing a heat exchanger.</p> <p><u>DIRECT EVAPORATIVE COOLING.</u> The evaporative cooling process where water evaporates directly into the air stream, reducing the air's dry-bulb temperature and raising its humidity level.</p>		X			Necessary addition for clarification
M4-18	<p>Change existing definition for FLAMMABILITY CLASSIFICATION (REFRIGERANT), REFRIGERANT SAFETY CLASSIFICATIONS AND TOXICITY CLASSIFICATION to:</p> <p><u>REFRIGERANT SAFETY CLASSIFICATIONS-GROUP CLASSIFICATION.</u> The alphabetical/numerical designation that indicate indicates both the toxicity and flammability classification-classifications of refrigerants.</p> <p><u>Toxicity. See Toxicity classification (Refrigerant).</u></p> <p><u>Flammability. See Flammability classification (Refrigerant).</u></p> <p><u>TOXICITY CLASSIFICATION (REFRIGERANT).</u> An alphabetical <u>alphabetical</u> designation used to identify the toxicity of refrigerants. Class A indicates a refrigerant with lower toxicity. Class B indicates a refrigerant with higher toxicity.</p> <p><u>FLAMMABILITY CLASSIFICATION (REFRIGERANT).</u> The alphabetical/numerical designation used to identify the flammability of refrigerants.</p> <p>Indicates a refrigerant with no flame propagation.</p> <p>Indicates a refrigerant with lower flammability and lower burning velocity.</p> <p>Indicates a refrigerant with lower flammability.</p> <p>Indicates a refrigerant with higher flammability.</p>		X			Clarification
M5-18	<p>Change existing definition for PRESS-CONNECT JOINT to:</p> <p><u>PRESS-CONNECT JOINT.</u> A permanent mechanical joint incorporating an elastomeric seal or an elastomeric seal and corrosion - resistant grip <u>or bite</u> ring. The joint is made with a pressing tool and jaw or ring approved by the fitting manufacturer.</p>		X			Clarification
M6-18	<p>Change existing definition for Seismic resistance to:</p> <p><u>301.18 Seismic resistance.</u> Where earthquake loads are applicable in accordance with the International Building Code, mechanical system supports, <u>anchorage, and bracing,</u> shall be</p>		X			Clarification

DRAFT

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	designed and installed for the seismic forces in accordance with <u>Chapter 16</u> of the International Building Code.					
M10-18	<p>Add new definition for 307.1.2 Identification and 307.2.3.3 Identification as follows:</p> <p>307.1.2 Identification. Where condensate piping is concealed, primary and secondary drain pipes that serve the same appliance and terminate together at a remote location shall be identified. The termination of concealed condensate piping shall be marked to indicate whether the piping is connected to the primary or to the secondary drain.</p> <p>307.2.3.3 Identification. Where condensate piping is concealed, primary and secondary drain pipes that serve the same appliance and terminate together at a remote location shall be identified. The termination of concealed condensate piping shall be marked to indicate whether the piping is connected to the primary or to the secondary drain.</p>		X			Clarification
M11-18	<p>Add new definition for Condensate discharge as follows:</p> <p>307.2.1.1 (IPC [M] 314.2.1.1) Condensate discharge. <u>Condensate drains shall not directly connect to any plumbing drain, waste or vent pipe. Condensate drains shall not discharge into a plumbing fixture other than a floor sink, floor drain, trench drain, mop sink, hub drain, standpipe, utility sink or laundry sink. Condensate drain connections to a lavatory wye branch tailpiece or to a bathtub overflow pipe, shall not be considered as discharging to a plumbing fixture. Except where discharging to grade outdoors, the point of discharge of condensate drains shall be located within the same occupancy, tenant space or dwelling unit as the source of the condensate.</u></p>		X			Necessary addition for clarification
M14-18	<p>Change existing definition for Drain pipe materials and sizes to:</p> <p>307.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be <u>ABS, cast iron, galvanized steel, copper, and copper alloy, CPVC, cross-linked polyethylene, galvanized steel, PE-RT, polyethylene, ABS polypropylene, CPVC, PVC, or polypropylene-PVDF pipe or tubing.</u> Components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 of the International Plumbing Code relative to the material type. Condensate waste and drain line size shall be not less than 3/4-inch pipe size internal diameter and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with Table 307.2.2.</p>		X			Clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
M17-18	<p>Change existing definition for 401.4 Intake opening location and 501.3.1 Location of exhaust outlets to:</p> <p>401.4 Intake opening location. Air intake openings shall comply with all of the following:</p> <p>3. Intake openings shall be located not less than 3 feet (914 mm) below contaminant sources where such sources are located within 10 feet (3048 mm) of the opening. <u>Separation is not required between intake air openings and living space exhaust air openings of an individual dwelling unit or sleeping unit where an approved factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the manufacturer's instructions.</u></p> <p>501.3.1 Location of exhaust outlets. The termination point of exhaust outlets and ducts discharging to the outdoors shall be located with the following minimum distances:</p> <p>3. For all environmental air exhaust: 3 feet (914 mm) from property lines; 3 feet (914 mm) from operable openings into buildings for all occupancies other than Group U, and 10 feet (3048 mm) from mechanical air intakes. Such exhaust shall not be considered hazardous or noxious. <u>Separation is not required between intake air openings and living space exhaust air openings of an individual dwelling unit or sleeping unit where an approved factory-built intake/exhaust combination termination fitting is used to separate the air streams in accordance with the manufacturer's instructions.</u></p>		X			Clarification
M18-18	<p>Change existing definition for 403.2.1 Recirculation of air to:</p> <p>403.2.1 Recirculation of air. The outdoor air required by Section 403.3 shall not be recirculated. Air in excess of that required by Section 403.3 shall not be prohibited from being recirculated as a component of supply air to building spaces, except that:</p> <p>2. Supply air to a swimming pool and associated deck areas shall not be recirculated unless such air is dehumidified to maintain the relative humidity of the area at 60 percent or less. Air from this area shall not be recirculated to other spaces where more than 10 percent of the resulting supply airstream consists of air recirculated from these spaces. <u>The design and installation of dehumidification systems shall comply with ACCA Manual SPS, HVAC Design</u></p>		X			Prevents water damage.

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE					
		Decrease	None	Increase							
Sub Code:											
	<u>for Swimming Pools and Spas.</u>										
M20-18	<p>Change existing definition for 401.2 Ventilation required and 403.1 Ventilation system to:</p> <p>401.2 Ventilation required. Every occupied space shall be ventilated by natural means in accordance with Section 402 or by mechanical means in accordance with Section 403. Where the air infiltration rate in a dwelling unit is less than 5 air changes per hour when tested with a blower door at a pressure of 0.2 inch water column (50 Pa) in accordance with Section R402.4.1.2 of the International Energy Conservation Code, the dwelling unit shall be ventilated by <u>Dwelling units complying with the air leakage requirements of the International Energy Conservation Code or ASHRAE 90.1 shall be ventilated by</u> mechanical means in accordance with Section 403. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407.</p> <p>403.1 Ventilation system. Mechanical ventilation shall be provided by a method of supply air and return or exhaust air except that mechanical ventilation air requirements for Group R-2, R-3 and R-4 occupancies three stories and less in height above grade plane shall be provided by an exhaust system, supply system or combination thereof. The amount of supply air shall be approximately equal to the amount of return and exhaust air. The system shall not be prohibited from producing negative or positive pressure. The system to convey ventilation air shall be designed and installed in accordance with Chapter 6.</p>			X	Minimal	Clarification					
M24-18	<p>Change existing definition for TABLE 403.3.1.1 to:</p> <p>g. Mechanical exhaust is required and recirculation from such spaces is prohibited except that recirculation shall be permitted where the resulting supply airstream consists of not more than 10 percent air recirculated from these spaces <u>prohibited. For occupancies other than science laboratories, where there is a wheel type energy recovery ventilation (ERV) unit in the exhaust system design, the volume of air leaked from the exhaust airstream into the outdoor airstream within the ERV shall be less than 10 percent of the outdoor air volume.</u> Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Items 2 and 4).</p>		X			Clarification					
M25-18	<p>Change existing definition for TABLE 403.3.1.1 to:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 20%; text-align: center;">OCCUPANCY CLASSIFICATION</td> <td style="width: 15%; text-align: center;">OCCUPANT DENSITY #/1000 FT²^a</td> <td style="width: 15%; text-align: center;">PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R^b CFM/PERSON</td> <td style="width: 15%; text-align: center;">AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_s CFM/FT²^a</td> <td style="width: 15%; text-align: center;">EXHAUST AIRFLOW RATE CFM/FT²^a</td> </tr> </table>	OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT ² ^a	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R ^b CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _s CFM/FT ² ^a	EXHAUST AIRFLOW RATE CFM/FT ² ^a			X	\$0.50 per fan cfm	Clarification
OCCUPANCY CLASSIFICATION	OCCUPANT DENSITY #/1000 FT ² ^a	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R ^b CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R _s CFM/FT ² ^a	EXHAUST AIRFLOW RATE CFM/FT ² ^a							

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY					IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
						Decrease	None	Increase		
Sub Code:										
	Commercial laundry	10	255	-0.12	-					
	Kitchens ^b	-	-	-	2550/100f					
	Toilet rooms and bathrooms ^c	-	-	-	2025/50f					
M28-18	Change existing definition for 403.3.2.5 Ventilating equipment: 403.3.2.5 Ventilating equipment. Exhaust equipment serving single dwelling units. Fans providing exhaust or outdoor air shall be listed and labeled to provide the minimum required air flow in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.						X			Clarification
M29-18	Delete existing definition for 403.3.1.5 Balancing. Add new definition for 608.1 Balancing as follows: 608.1 Balancing. Air distribution, ventilation and exhaust systems shall be provided with means to adjust the system to achieve the design airflow rates and shall be balanced by an approved method. Ventilation air distribution shall be balanced by an approved method and such balancing shall verify that the air distribution system is capable of supplying and exhausting the airflow rates required by Chapter 4.						X			Clarification
M30-18	Change existing definition for 403.3.1.3 System operation to: 403.3.1.3 System operation. The minimum flow rate of outdoor air that the ventilation system must be capable of supplying during its operation shall be permitted to be based on the rate per person indicated in Table 403.3.1.1 and the actual number of occupants present. <u>Where demand controlled ventilation is employed to adjust the outdoor air flow rate based on the actual number of occupants present, the minimum quantity of outdoor air shall not fall below that determined from the area outdoor airflow rate column of Table 403.3.1.1 during periods when the building is expected to be occupied.</u>						X			Clarification
M31-18	Change existing definition for 407.1 General to: 407.1 General. Mechanical ventilation for ambulatory care facilities and Group I-2 occupancies shall be designed and installed in accordance with this code and ASHRAE 170. <u>and NFPA 99.</u>							X	Minimal	Clarification
M32-18	Change existing definition for Balanced ventilation, 403.3.2.1 Outdoor air for dwelling units to: BALANCED VENTILATION. Any combination of concurrently operating mechanical exhaust and mechanical supply whereby the total mechanical exhaust airflow rate and is within 10% of the total mechanical supply airflow rate are substantially the same. 403.3.2.1 Outdoor air for dwelling units. An outdoor air ventilation system consisting of a mechanical exhaust system, supply system or combination thereof shall be installed for each					X			Minimal	Clarification

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>dwelling unit. Local exhaust or supply systems, including outdoor air ducts connected to the return side of an air handler, are permitted to serve as such a system. The outdoor air ventilation system shall be designed to provide the required rate of outdoor air continuously during the period that the building is occupied. The minimum continuous outdoor airflow rate shall be determined in accordance with Equation 4-9.</p> <p>QOA=0.01A_{floor}+7.5(Nbr +1) (Equation 4-9) where:</p> <p>QOA = outdoor airflow rate, cfm A_{floor} = conditioned floor area, ft² Nbr = number of bedrooms; not to be less than one</p> <p>Exceptions:</p> <ol style="list-style-type: none"> The outdoor air ventilation system is not required to operate continuously where the system has controls that enable operation for not less than 1 hour of each 4-hour period. The average outdoor air flow rate over the 4-hour period shall be not less than that prescribed by Equation 4-9.. The minimum mechanical ventilation rate determined in accordance with Equation 4.9 shall be reduced by 25% <u>by 30%</u>, provided that at both of the following conditions apply: <ol style="list-style-type: none"> A ducted system supplies recirculated ventilation air directly to each bedroom and the largest common area. For continuously operating systems, not less than 70% of the air volume in the conditioned space is recirculated each hour through the ducted system, or for intermittently operated systems, an equivalent air recirculation is provided during each four hour period to one or more of the following rooms: <ol style="list-style-type: none"> <u>Living room</u> <u>Dining room</u> <u>Kitchen.</u> 2.2.2.3.—The whole-house ventilation system is a balanced ventilation system. 					
M34-18	<p>Change existing definition for 501.2 Independent system required, 504.1 Installation and 505.3 Exhaust ducts to: 501.2 Independent system required. Single or combined mechanical exhaust systems for environmental air shall be independent of all other exhaust systems. Dryer, domestic kitchen and hazardous exhaust shall be independent of all other systems. Type I exhaust systems shall be independent of all</p>		X			Clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>other exhaust systems except as provided in Section 506.3.5. Single or combined Type II exhaust systems for food-processing operations shall be independent of all other exhaust systems. Kitchen-Commercial kitchen exhaust systems shall be constructed in accordance with Section 505 for domestic cooking operations and Sections 506 through 509. for commercial cooking operations.</p> <p>504.1 Installation. Clothes dryers shall be exhausted in accordance with the manufacturer's instructions. Dryer exhaust systems shall be independent of all other systems and shall convey the moisture and any products of combustion to the outside of the building.</p> <p>505.3 Exhaust ducts. Domestic cooking exhaust equipment shall discharge to the outdoors through sheet metal ducts constructed of galvanized steel, stainless steel, aluminum or copper. Such ducts shall have smooth inner walls, shall be air tight, <u>and shall be equipped with a backdraft damper.</u>, and shall be independent of all other exhaust systems. Installations in Group I-1 and I-2 occupancies shall be in accordance with the International Building Code and Section 904.13 of the International Fire Code.</p> <p>Delete existing definition for 510.4 Independent system.</p>					
M35-18	<p>Add new definition for 502.20.1 Operation as follows: 502.20.1 Operation. The exhaust system for manicure and pedicure stations shall have controls that <u>operate the system continuously when the space is occupied.</u></p>			X	\$1.00 per room sqft.	Necessary addition for clarification
M43-18	<p>Change existing definition for 510.6.5 Makeup air to: 510.6.5 Makeup air. Makeup air <u>from all sources</u> shall be provided <u>during operations</u> at a rate approximately equal to the rate that air is exhausted by the hazardous <u>exhaust system</u>. <u>Makeup air shall be provided by gravity or mechanical means or both. Mechanical makeup air systems shall be automatically controlled to start and operate simultaneously with the exhaust system. The makeup air shall not reduce the effectiveness of the exhaust system.</u> Makeup air intakes shall be located in accordance with Section 401.4.</p>		X			Clarification
M45-18	<p>Change existing definition for 507.1 General to: 507.1 General. Exceptions: 4. <u>Smoker ovens with integral exhaust systems provided that the appliance is installed in accordance with the manufacturer's installation instructions, is listed and tested for the application and complies with Chapter 5.</u></p>		X			Clarification
M46-18	<p>Change existing definition for 507.1 General to: 507.1 General.</p>		X			Clarification

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Exceptions:</p> <p>4. <u>Smoker ovens with integral exhaust systems provided that the appliance is installed in accordance with the manufacturer's installation instructions, is listed and tested for the application and complies with Chapter 5.</u></p>					
M47-18	<p>Change existing definition for 506.3.9 Grease duct horizontal cleanouts to:</p> <p>506.3.9 Grease duct horizontal cleanouts.</p> <p>6. Shall be <u>Be</u> located at grease reservoirs.</p> <p>7. <u>Be located within 3 feet of horizontal discharge fans.</u></p>			X	\$0.50 per fan cfm	Clarification
M52-18	<p>Change existing definition for 506.5.2 Pollution-control units to:</p> <p>506.5.2 506.5.2 Pollution-control units. The installation of pollution-control units shall be in accordance with the manufacturer's installation instructions and all of the following:</p> <ol style="list-style-type: none"> 1. Pollution-control units shall be listed and labeled in accordance with UL 1978 <u>8782</u>. 2. Fans serving pollution-control units shall be listed and labeled in accordance with UL 762. 3. Pollution <u>Bracing and supports for pollution-control units shall be mounted and secured in accordance with the manufacturer's installation instructions and of noncombustible material securely attached to the structure and designed to carry gravity and seismic loads within the stress limitations of the International Building Code.</u> 4. Pollution-control units located indoors shall be listed and labeled for such use. Where enclosed duct systems, as required by Section 506.3.11, are connected to a pollution control unit, such unit shall be located in a room or space <u>listed and labeled, in accordance with UL 2221 or ASTM E2336, for location in an enclosure having the same fire-resistance rating as the duct enclosure. Access shall be provided for servicing and cleaning of the unit. The space or enclosure shall be ventilated in accordance with the manufacturer's installation instructions.</u> 5. A clearance of not less than 18 inches (457 mm) <u>Clearances shall be maintained between the pollution-control unit and combustible material in accordance with the listing.</u> 		X		Provides clarity on the requirements for PCUs, as well as additional flexibility.	
M53-18 Part I	<p>Add new definition for 504.6 Booster fans prohibited as follows:</p> <p>504.6 Booster fans prohibited. <u>Domestic booster fans shall not be installed in dryer exhaust systems.</u></p>		X			Necessary addition for clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
M53-18 Part II	Add new definition for 1502.4.5 Booster fans prohibited as follows: M1502.4.5 Booster fans prohibited. Domestic booster fans shall not be installed in dryer exhaust systems.		X			Necessary addition for clarification
M54-18	Change existing definition for 506.3.7 Prevention of grease accumulation in grease ducts to: 506.3.7 Prevention of grease accumulation in grease ducts. Duct systems serving a Type I hood shall be constructed and installed so that grease cannot collect in any portion thereof, and the system shall slope not less than one-fourth unit vertical in 12 units horizontal (2-percent slope) toward the hood or toward a grease reservoir designed and installed in accordance with Section 506.3.7.1. Where horizontal ducts exceed 75 feet (22 860 mm) in length, the slope shall be not less than one unit vertical in 12 units horizontal (8.3-percent slope). Exception: Factory-built grease ducts shall be installed at a slope that is in accordance with the listing and manufacturer's installation instructions.		X			Clarification
M58-18	Change existing definition for 514.2 Prohibited applications to: 514.2 Prohibited applications. Energy recovery ventilation systems shall not be used in the following systems: 1. Hazardous exhaust systems covered in Section 510. 2. Dust, stock and refuse systems that convey explosive or flammable vapors, fumes or dust. 3. Smoke control systems covered in Section 513. 4. Commercial kitchen exhaust systems serving Type I or Type #hoods. 5. Clothes dryer exhaust systems covered in Section 504.		X			Clarification
M59-18	Add new definition for 504.4.1 Termination location as follows: 504.4.1 Termination location. Exhaust duct terminations shall be in accordance with the dryer manufacturer's installation instructions. Where the manufacturer's instructions do not specify a termination location, the exhaust duct shall terminate not less than 3 feet (914 mm) in any direction from openings into buildings including openings in ventilated soffits.		X			Necessary addition for clarification
M62-18	Change existing definition for 511.1.5 Explosion relief vents to: 511.1.5 Explosion control. Explosion control shall be provided in accordance with the requirements of the International Fire Code on all systems that convey combustible dust or combustible refuse or stock that produce produces combustible dusts in such a manner that the concentration and conditions could create a fire or explosion hazard. Determination of concentrations or conditions that are deemed to not create a fire or explosion		X			Clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	hazard <u>shall be</u> based on a Dust Hazard Analysis prepared in accordance with Section 2203.2 of the International Fire Code.					
M63-18	<p>Change existing definition for 602.2 Construction and 603.5.1 Gypsum ducts to:</p> <p>602.2 Construction. Plenum enclosure construction materials that are exposed to the airflow shall comply with the requirements of Section 703.5 of the International Building Code or such materials shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723. The use of gypsum boards to form plenums shall be limited to systems where the air temperatures do not exceed 125°F (52°C) and the building and mechanical system design conditions are such that the gypsum board surface temperature will be maintained above the airstream dew-point temperature. <u>Air Supply air</u> plenums formed by gypsum boards shall not be incorporated in air-handling systems utilizing <u>direct evaporative coolers-cooling systems.</u></p> <p>603.5.1 Gypsum ducts. The use of gypsum boards to form air shafts (ducts) shall be limited to return air systems where the air temperatures do not exceed 125°F (52°C) and the gypsum board surface temperature is maintained above the airstream dew-point temperature. <u>Air-Supply air</u> ducts formed by gypsum boards shall not be incorporated in air-handling systems utilizing <u>direct evaporative coolers cooling systems.</u></p>	X			Minimal	Clarification
M64-18	<p>Change existing definition for 601.5 Return air openings to:</p> <p>601.5 Return air openings.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where the air from such spaces is dehumidified in accordance with Section 403.2.1, Item 2. Dedicated HVAC systems serving only such spaces. <p>Exceptions:</p> <ol style="list-style-type: none"> Taking return air from a kitchen is not prohibited where such return air openings serve the kitchen and are located not less than 10 feet (3048 mm) from the cooking appliances. <u>Taking return air from a kitchen is not prohibited in a dwelling unit where the kitchen and living spaces are in a single room and the cooking appliance is electric and located not less than 5 feet in any direction from the return air intake opening.</u> <u>23. Dedicated forced air systems serving only the garage shall not be prohibited from obtaining return air from the garage.</u> 	X			Minimal	Clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
M71-18	<p>Change existing definition for 602.2.1.8 Pipe and duct insulation within plenums to:</p> <p>602.2.1.8 Pipe and duct insulation within plenums. Pipe and duct insulation contained within plenums, including insulation adhesives, shall have a flame spread index of not more than 25 and a smoke developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723, using the specimen preparation and mounting procedures of ASTM E2231. Pipe and duct insulation shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F(121°C). Pipe and duct insulation shall be listed and labeled. Pipe and duct insulation shall not be used to reduce the maximum flame spread and smoke-developed indexes specified in Section 602.2.1.7 except where <u>the pipe or duct and its related insulation, coatings, and adhesives are tested as a composite assembly in accordance with section 602.2.1.7. of the pipe, ducts, tubing, insulation, coatings and adhesives in accordance with ASTM E84 or UL 723.</u></p>		X			Clarification
M72-18	<p>Change existing definition for 607.4 Access and identification:</p> <p>607.4 Access and identification. Fire Access and identification of fire and smoke dampers shall be provided with an approved means of access, to permit inspection and maintenance of the damper and its operating parts. Dampers equipped with fusible links, internal operators, or both shall be provided with an access door that is not less than 12 inches (305mm) square or provided with a removable duct section. The access shall not affect the integrity of fire resistance-rated assemblies. The access openings shall not reduce the fire-resistance rating of the assembly. Access points shall be permanently identified on the exterior by a label having letters not less than 0.5 inch (12.7 mm) in height reading: FIRE/SMOKE DAMPER, SMOKE DAMPER or FIRE DAMPER. Access doors in ducts shall be tight fitting and suitable for the required duct construction. comply with Sections 607.4.1 through 607.4.2.</p> <p><u>607.4.1 Access. Fire and smoke dampers shall be provided with an approved means of access that is large enough to permit inspection and maintenance of the damper and its operating parts. Dampers equipped with fusible links, internal operators, or both shall be provided with an access door that is not less than 12 inches (305 mm) square or provided with a removable duct section.</u></p>		X			Clarification

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>607.4.1.1</u> The access shall not affect the integrity of fire-resistance-rated assemblies. The access openings shall not reduce the fire- resistance-rating of the assembly. Access doors in ducts shall be tight fitting and suitable for the required duct construction.</p> <p><u>607.4.1.2</u> Restricted Access. Where space constraints or physical barriers restrict access to a damper for periodic inspection and testing, the damper shall be a single- or multi-blade damper and shall comply with the remote inspection requirements of NFPA 80 or NFPA 105.</p> <p><u>607.4.2 Identification.</u> Access points shall be permanently identified on the exterior of a label having letters not less than 1/2 inch (12.7 mm) in height reading: FIRE/SMOKE DAMPER, SMOKE DAMPER or FIRE DAMPER.</p>					
M74-18	<p>Change existing definition for 604.3 Coverings and linings to: 604.3 Coverings and linings. Coverings-Duct coverings and linings, including adhesives where used, shall have a flame spread index not more than 25 and a smoke-developed index not more than 50, when tested in accordance with ASTM E84 or UL 723, using the specimen preparation and mounting procedures of ASTM E2231. Duct coverings and linings shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F (121°C). Coverings and linings shall be listed and labeled.</p> <p>Exception: <u>Polyurethane foam insulation that is spray applied to the exterior of ducts in attics and crawlspaces shall be subject to all of the following requirements:</u></p> <ol style="list-style-type: none"> <u>1. The foam plastic insulation shall have a flame spread index not greater than 25 and a smoke developed index not greater than 450, when tested in accordance with ASTM E84 or UL 723, using the specimen preparation and mounting procedures of ASTM E2231.</u> <u>2. The foam plastic insulation shall not flame, glow, smolder or smoke when tested in accordance with ASTM C411 at the temperature to which they are exposed in service. The test temperature shall not fall below 250°F (121°C).</u> <u>3. The foam plastic insulation complies with the requirements of Section 2603 of the International Building Code.</u> <u>4. The foam plastic insulation is protected against ignition in accordance with the requirements of Section 2603.4.1.6 of the International Building Code.</u> 	X		Minimal	Clarification	

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
M80-18	Change existing definition for 801.21 Blocked vent switch to: 801.21 Blocked vent switch. The venting system for oil-fired appliances shall be equipped with a device that will stop burner operation in the event that the venting system is obstructed. Such device shall have a manual reset, and shall be installed in accordance with the manufacturer's instructions.			X	Minimal	Clarification
M81-18	Add new definition for 920.4 Prohibited Uses as follows: 920.4 Prohibited Uses. <u>In Group I-2 and ambulatory care facilities, suspended-type unit heaters are prohibited in corridors, exit access stairways and ramps, exit stairways and ramps and patient sleeping areas.</u>		X			Necessary addition for clarification
M83-18	Change existing definition for 905.1 General to: 905.1 General. Fireplace stoves and solid-fuel-type room heaters shall be listed and labeled and shall be installed in accordance with the conditions of the listing. Fireplace stoves shall be tested in accordance with UL 737. Solid-fuel-type room heaters shall be tested in accordance with UL 1482. Fireplace inserts intended for installation in fireplaces shall be listed and labeled in accordance with the requirements of UL 1482 and shall be installed in accordance with the manufacturer's instructions. <u>New Wood Burning Residential Hydronic Heaters shall be EPA certified.</u>		X			Clarification
M84-18	Change existing definitions for Large-Diameter Ceiling Fan to: LARGE-DIAMETER CEILING FAN. A ceiling fan that is greater than 7 feet (2134 mm) in diameter. These fans are sometimes also referred to as High-Volume, Low-Speed (HVLS) fans.		X			Clarification
M85-18	Add new definitions for SECTION 202 to: SECTION 202 GENERAL DEFINITIONS <u>UNVENTED ALCOHOL FUEL BURNING DECORATIVE APPLIANCE.</u> <u>A stationary, self-contained appliance intended to be directly or indirectly secured to a wall or floor and not intended for duct connection. Such appliance burns alcohol and is made in a manufacturing facility for subsequent delivery to the installation site.</u> Add new definition for SECTION 929 as follows: <u>SECTION 929</u> <u>UNVENTED ALCOHOL FUEL BURNING DECORATIVE APPLIANCES</u> <u>929.1 GENERAL.</u> <u>Unvented alcohol fuel-burning decorative appliances shall be listed and labeled in accordance with UL1370 and shall be installed in accordance with the conditions of the listing, manufacturer's installation instructions, and Chapter 3.</u>			X	Minimal	Necessary addition for clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
M86-18 Part I	<p>Change existing definitions for 908.1 General, 916.1 General, 918.1 Forced-air furnaces, 918.2 Heat pumps and 1101.2 Factory-built equipment and appliances to:</p> <p>908.1 General. A cooling tower used in conjunction with an air-conditioning appliance shall be installed in accordance with the manufacturer's instructions. Factory-built cooling towers shall be listed in accordance with UL 1995, <u>or UL/CSA 60335-2-40.</u></p> <p>916.1 General. Pool and spa heaters shall be installed in accordance with the manufacturer's instructions. Oil-fired pool and spa heaters shall be tested in accordance with UL 1261. Pool and spa heat pump water heaters shall comply with UL 1995, <u>or UL/CSA 60335-2-40, or CSA C22.2 No. 236.</u></p> <p>Exception: Portable residential spas and portable residential exercise spas shall comply with UL 1563 or CSA C22.2 No. 218.1.</p> <p>918.1 Forced-air furnaces. Oil-fired furnaces shall be tested in accordance with UL 727. Electric furnaces shall be tested in accordance with UL 1995, <u>or UL/CSA 60335-2-40.</u> Solid fuel furnaces shall be tested in accordance with UL 391. Forced-air furnaces shall be installed in accordance with the listings and the manufacturer's instructions.</p> <p>918.2 Heat pumps. Electric heat pumps shall be tested in accordance with UL 1995, <u>or UL/CSA 60335-2-40.</u></p> <p>1101.2 Factory-built equipment and appliances. Listed and labeled self-contained, factory-built equipment and appliances shall be tested in accordance with UL 207, <u>UL 412, UL 471 or 1995, UL1995, UL/CSA 60335-2-40, or UL 60335-2-89.</u> Such equipment and appliances are deemed to meet the design, manufacture and factory test requirements of this code if installed in accordance with their listing and the manufacturer's instructions.</p>		X			UL 60335-2-40 is harmonized with requirements in Canada and Europe. These requirements include provisions for the most current technology and use of flammable refrigerants and is currently being used to list new products.
M86-18 Part II	<p>Change existing definitions for M1402.1 General and M2006.1 General to:</p> <p>M1402.1 General. Oil-fired central furnaces shall conform to ANSI/UL 727. Electric furnaces shall conform to UL 1995 <u>or UL/CSA 60335-2-40.</u></p> <p>M2006.1 General. Pool and spa heaters shall be installed in accordance with the manufacturer's installation instructions. Oil-fired pool heaters shall comply with UL 726. Electric pool and spa heaters shall comply with UL 1261. Pool and spa heat pump water heaters shall comply with UL 1995, <u>UL/CSA 60335-2-40 or CSA C22.2 No. 236.</u></p>		X			UL 60335-2-40 harmonized with requirements in Canada and Europe to include provisions for most current technology and use of

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Exception: Portable residential spas and portable residential exercise spas shall comply with UL 1563 or CSA C22.2 No. 218.1.</p>					flammable refrigerants and is currently being used to list new products.
M87-18	<p>Change existing definition for 1004.1 Standards to: 1004.1 Standards. Boilers shall be designed, constructed and certified in accordance with the ASME Boiler and Pressure Vessel Code, Section I or IV. Controls and safety devices for boilers with fuel input ratings of <u>less than 12,500,000 Btu/hr (3,662,500 W)</u> or less shall meet the requirements of ASME CSD-1. Controls and safety devices for boilers with inputs greater than <u>or equal to 12,500,000 Btu/hr (3,662,500 W)</u> shall meet the requirements of NFPA 85. Packaged oil-fired boilers shall be listed and labeled in accordance with UL 726. Packaged electric boilers shall be listed and labeled in accordance with UL 834. Solid-fuel-fired boilers shall be listed and labeled in accordance with UL 2523.</p>		X			Clarification
M89-18	Update existing definition for TABLE 1103.1. REFRIGERANT CLASSIFICATION, AMOUNT AND OEL		X			Modification adds an update to the proposal from ASHRAE 34.
M93-18	<p>Change existing definition for Scope, TABLE 1103.1 REFRIGERANT CLASSIFICATION, AMOUNT AND OEL, Industrial occupancies and refrigerated rooms, All occupancies, Protection from refrigerant decomposition, 1105.6.3 Ventilation rate, [F] 1105.9 Emergency pressure control system, Flammable refrigerants and 1108.2 Test gases to:</p> <p>Scope. This chapter shall govern the design, installation, construction and repair of refrigeration systems that vaporize and liquefy a fluid during the refrigerating cycle. Refrigerant piping design and installation, including pressure vessels and pressure relief devices, shall conform to this code. Permanently installed refrigerant storage systems and other components shall be considered as part of the refrigeration system to which they are attached.</p> <p>Industrial occupancies and refrigerated rooms. This section applies only to rooms and spaces that: are within industrial occupancies; contain a refrigerant evaporator; are maintained at</p>		X			Removes complexity of overlapping requirements in the IMC

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>temperatures below 68°F (20°C); and are used for manufacturing, food and beverage preparation, meat cutting, other processes and storage. Where a machinery room would otherwise be required by Section 1104.2, a machinery room shall not be required where all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The space containing the machinery is separated from other occupancies by tight construction with tight-fitting doors. 2. Access is restricted to authorized personnel. 3. Refrigerant detectors are installed as required for machinery rooms in accordance with Section 1105.3. <p>Exceptions/Exception:</p> <ol style="list-style-type: none"> 1. Refrigerant detectors are not required in unoccupied areas that contain only continuous piping that does not include valves, valve assemblies, equipment, or equipment connections. 2. Where approved alternatives are provided, refrigerant detectors for ammonia refrigeration are not required for rooms or areas that are always occupied, and for rooms or areas that have high humidity or other harsh environmental conditions that are incompatible with detection devices. <ol style="list-style-type: none"> 4. Surfaces having temperatures exceeding 800°F (427°C) and open flames are not present where any Group A2, B2, A3 or B3 refrigerant is used (see Section 1104.3.4). 5. All electrical equipment and appliances conform to Class 1, Division 2, hazardous location classification requirements of NFPA 70 where the quantity of any Group A2, B2, A3 or B3 refrigerant, other than ammonia, in a single independent circuit would exceed 25 percent of the lower flammability limit (LFL) upon release to the space. 6. All refrigerant-containing parts in systems with a total connected compressor power exceeding 100 horsepower (hp) (74.6 kW) except evaporators used for refrigeration or dehumidification, condensers used for heating, control and pressure relief valves for either, low-probability pumps and connecting piping are located either outdoors or in a machinery room. <p>All occupancies. The total of all Group A2, B2, A3 and B3 refrigerants other than R-717, ammonia, shall not exceed 1,100 pounds (499 kg) except where approved.</p> <p>Protection from refrigerant decomposition. Where any device having an open flame or surface temperature greater than 800°F</p>					

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>(427°C) is used in a room containing more than 6.6 pounds (3 kg) of refrigerant in a single independent circuit, a hood and exhaust system shall be provided in accordance with Section 510. Such exhaust system shall exhaust combustion products to the outdoors.</p> <p>Exception: A hood and exhaust system shall not be required where any of the following apply:</p> <ol style="list-style-type: none"> 1. The refrigerant is R-717, R-718 or R-744. 2. The combustion air is ducted from the outdoors in a manner that prevents leaked refrigerant from being combusted. <p>1105.6.3 Ventilation rate. For other than ammonia systems, the mechanical Mechanical ventilation systems shall be capable of exhausting the minimum quantity of air both at normal operating and emergency conditions, as required by Sections 1105.6.3.1 and 1105.6.3.2. The minimum required emergency ventilation rate for ammonia shall be 30 air changes per hour in accordance with IAR2. Multiple fans or multispeed fans shall be allowed to produce the emergency ventilation rate and to obtain a reduced airflow for normal ventilation.</p> <p>[F] 1105.9 Emergency pressure control system. Permanently installed refrigeration systems containing more than 6.6 pounds (3 kg) of flammable, toxic or highly toxic refrigerant or ammonia <u>Emergency pressure control systems</u> shall be provided with an emergency pressure control system in accordance with Section 605.10 of the International Fire Code.</p> <p>Flammable refrigerants. Where refrigerants of Groups A2, A3, B2 and B3 are used, the machinery room shall conform to the Class 1, Division 2, hazardous location classification requirements of NFPA 70.</p> <p>Exceptions <u>Exception:</u></p> <ol style="list-style-type: none"> 1. Ammonia machinery rooms that are provided with ventilation in accordance with Section 1106.3. 2. Machinery rooms for systems containing Group A2L refrigerants that are in accordance with Section 1106.5. <p>1108.2 Test gases. Tests shall be performed with an inert dried gas including, but not limited to, nitrogen and carbon dioxide. Oxygen, air, combustible gases and mixtures containing such gases shall not be used.</p> <p>Exception: The use of air is allowed to test R-717, ammonia, systems provided that they are subsequently evacuated before charging with refrigerant.</p>					

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Table 4. 2021 IMC Changes Cost Impact

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	<p>Add new definition for Refrigerants other than ammonia and Ammonia refrigerant as follows:</p> <p><u>Refrigerants other than ammonia.</u> Refrigerant piping design and installation, including pressure vessels and pressure relief devices, for systems containing a refrigerant other than ammonia shall comply with this chapter and ASHRAE 15.</p> <p><u>Ammonia refrigerant.</u> Refrigeration systems using ammonia as the refrigerant shall comply with IIAR 2, IIAR 3, IIAR 4 and IIAR 5, and shall not be required to comply with this chapter.</p> <p>Delete existing definition for 1101.6 General, 1105.8 Ammonia discharge, and Ammonia room ventilation.</p>																								
M95-18	<p>Change existing definition for 1101.2 Factory-built equipment and appliances to:</p> <p style="text-align: center;">Table 1101.2 Factory-built equipment and appliances</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">EQUIPMENT</th> <th style="width: 50%;">STANDARD</th> </tr> </thead> <tbody> <tr> <td>Refrigeration fittings, including press-connect, flared, and threaded</td> <td>UL 109 and UL 207</td> </tr> <tr> <td>Air conditioning equipment</td> <td>UL 1995 or UL/CSA 60335-2-40</td> </tr> <tr> <td>Packaged terminal air conditioners and heat pumps</td> <td>UL 484 or UL/CSA 60335-2-40</td> </tr> <tr> <td>Split-system air conditioners <u>and heat pumps</u></td> <td>UL 1995 or UL/CSA 60335-2- 40</td> </tr> <tr> <td>Dehumidifiers</td> <td>UL 474 or UL/CSA 60335-2-40</td> </tr> <tr> <td>Unit coolers</td> <td>UL 412 or UL/CSA 60335-2-89</td> </tr> <tr> <td>Commercial refrigerators, freezers, beverage coolers, and walk-in coolers</td> <td>UL 471 or UL/CSA 60335-2-89</td> </tr> <tr> <td>Refrigerating units and walk-in coolers</td> <td>UL 427 or UL 60335-2-89</td> </tr> <tr> <td>Refrigerant-containing components and accessories</td> <td>UL 207</td> </tr> </tbody> </table>	EQUIPMENT	STANDARD	Refrigeration fittings, including press-connect, flared, and threaded	UL 109 and UL 207	Air conditioning equipment	UL 1995 or UL/CSA 60335-2-40	Packaged terminal air conditioners and heat pumps	UL 484 or UL/CSA 60335-2-40	Split-system air conditioners <u>and heat pumps</u>	UL 1995 or UL/CSA 60335-2- 40	Dehumidifiers	UL 474 or UL/CSA 60335-2-40	Unit coolers	UL 412 or UL/CSA 60335-2-89	Commercial refrigerators, freezers, beverage coolers, and walk-in coolers	UL 471 or UL/CSA 60335-2-89	Refrigerating units and walk-in coolers	UL 427 or UL 60335-2-89	Refrigerant-containing components and accessories	UL 207	X		Minimal	Clarification
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M99-18	<p>Change existing definition for SECTION 1109 to:</p> <p>1109.2 Piping location. Refrigerant piping shall comply with the installation location requirements of Sections 1109.2.1 through 1109.2.6 1109.2.7. Refrigerant piping for group A2L and B2L shall also comply with the requirements of Section 1109.3. Refrigerant piping for group A2, A3, B2 and B3 shall also comply with the requirements of Section 1109.4.</p>		X		Clarification																				

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	<p>1109.2.7 Pipe identification. Refrigerant pipe located in areas other than the room or space where the refrigerating equipment is located shall be identified. The pipe identification shall be located at intervals not exceeding 20 feet on the refrigerant piping or pipe insulation. The minimum height of lettering of the identification label shall be ½ inch. The identification shall indicate the refrigerant <u>designation and safety group classification of refrigerant used in the piping system.</u> For Group A2, A3, B2, and B3 refrigerant the identification shall also include the following statement: "DANGER – Risk of Fire or Explosion. Flammable Refrigerant." For any <u>Group B refrigerant, the identification shall also include the following statement: "DANGER - Toxic Refrigerant."</u></p> <p>1109.3.3 Pipe identification. Refrigerant pipe located in areas other than the room or space where the refrigerating equipment is located shall be identified. The pipe identification shall be located at intervals not exceeding 20 feet on the refrigerant piping or pipe insulation. The identification shall indicate the refrigerant designation and safety group classification of refrigerant used in the piping system. For Group B2 refrigerants the identification shall also include the following statement: "DANGER – Toxic Refrigerant." The minimum height of lettering of the identification label shall be ½ inch.</p> <p>1109.4.3 Pipe identification. Refrigerant pipe shall be identified with the refrigerant designation and safety group classification of refrigerant used in the piping system and the following statement: "DANGER – Risk of Fire or Explosion. Flammable Refrigerant." For Group B2 and B3 refrigerants the identification shall also include the following statement: "DANGER – Toxic Refrigerant." The identification shall be at intervals not exceeding 5 feet on the refrigerant piping or pipe insulation. The minimum height of lettering of the identification label shall be 1 inch.</p>																																													
M101-18	<p>Change existing definition for TABLE 1104.3.2 to:</p> <p style="text-align: center;">TABLE 1104.3.2 MAXIMUM PERMISSIBLE QUANTITIES OF REFRIGERANTS</p> <table border="1"> <thead> <tr> <th>TYPE OF REFRIGERATION SYSTEM</th> <th>MAXIMUM POUNDS FOR VARIOUS OCCUPANCIES</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td>Institutional</td> <td>Public Assembly</td> <td>Residential</td> <td>All other occupancies</td> </tr> <tr> <td>Sealed absorption system</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>In exit access</td> <td>0</td> <td>0</td> <td>3.3</td> <td>3.3</td> </tr> <tr> <td>In adjacent outdoor locations</td> <td>0</td> <td>0</td> <td>22</td> <td>22</td> </tr> <tr> <td>In other than exit access</td> <td>0</td> <td>6.6</td> <td>6.6</td> <td>6.6</td> </tr> <tr> <td>Unit systems</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>In other than exit access</td> <td>0</td> <td>0</td> <td>6.6</td> <td>6.6</td> </tr> </tbody> </table> <p>For SI: 1 pound = 0.454 kg.</p>	TYPE OF REFRIGERATION SYSTEM	MAXIMUM POUNDS FOR VARIOUS OCCUPANCIES					Institutional	Public Assembly	Residential	All other occupancies	Sealed absorption system					In exit access	0	0	3.3	3.3	In adjacent outdoor locations	0	0	22	22	In other than exit access	0	6.6	6.6	6.6	Unit systems					In other than exit access	0	0	6.6	6.6		X			Clarification
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Sub Code:														
	<p>Solvent-cemented joints. Joint surfaces shall be clean and free of moisture. An approved primer shall be applied to CPVC and PVC pipe-joint surfaces. Joints shall be made while the cement is wet. Solvent cement conforming to the following standards shall be applied to all joint surfaces:</p> <ol style="list-style-type: none"> 1. ASTM D2235 for ABS joints. 2. ASTM F493 for CPVC joints. 3. ASTM D2564 for PVC joints. <p>CPVC joints shall be made in accordance with ASTM D2846.</p> <p>Exception: For CPVC pipe joint connections, a primer is not required where all of the following conditions apply:</p> <ol style="list-style-type: none"> 1. The solvent cement used is third-party certified as conforming to ASTM F493. 2. The solvent cement is yellow in color. 3. The solvent cement is used only for joining 1/2-inch (12.7 mm) through 2-inch (51 mm) diameter CPVC pipe and fittings. 4. The CPVC pipe and/or fittings are manufactured in accordance with ASTM D2846. <p>1203.8 1203.9 Polybutylene plastic pipe and tubing. Joints between polybutylene plastic pipe and tubing or fittings shall be mechanical joints conforming to Section 1203.3 or heat-fusion joints conforming to Section 1203.8.1 <u>1203.9.1</u>.</p> <p>1203.8.1 1203.9.1 Heat-fusion joints. Joints shall be of the socket-fusion or butt-fusion type. Joint surfaces shall be clean and free of moisture. Joint surfaces shall be heated to melt temperatures and joined. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM D3309.</p> <p>Add new definition for 1203.8 as follows: <u>1203.8 CPVC/AL/CPVC plastic pipe.</u> Joints between CPVC/AL/CPVC plastic pipes or fittings shall be mechanical, solvent-cemented or threaded joints conforming to Section <u>1203.3</u></p>													
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M107-18	Change existing definition for 1203.14.3 Push-fit joints to: 1203.14.3 Push-fit joints-fittings. Push-fit joints that create a seal on the outside diameter of the tubing shall not be used with tubing that has an ethylene vinyl alcohol copolymer (EVOH) oxygen barrier layer fittings shall comply with ASSE 1061 and be used with PE-RT tubing that is rated for use with such fittings by the tubing manufacturer.			X			Clarification														
M108-18	Change existing definition for 1203.9.3 Push-fit joints to: 1203.9.3 Push-fit joints-fittings. Push-fit joints that create a seal on the outside diameter of the tubing shall not fittings shall comply with ASSE 1061 and be used with tubing that has an ethylene vinyl alcohol copolymer (EVOH) oxygen barrier layer PEX tubing that is rated for use with such fittings by the tubing manufacturer.			X			Clarification														
M109-18	Change existing definition for TABLE 1210.4, 1210.5, 1210.8 and Chapter 15 to: TABLE 1210.4 GROUND-SOURCE LOOP PIPE			X			Adding reference to C448 in this row, will indicate that this material is explicitly approved in ANSI/CSA/IG SHPA C448-16.														
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M109-18	<p>Change existing definition for TABLE 1210.4, 1210.5, 1210.8 and Chapter 15 to:</p> <p>Thermal barrier Insulation and thermal break required. Radiant floor heating systems shall be provided with <u>insulation and a thermal barrier-break</u> in accordance with Sections 1209.5.1 and 1209.5.2. Insulation R-values for slab-on-grade and suspended floor installation shall be in accordance with the International Energy Conservation Code.</p> <p>Thermal barrier Insulation material marking. Insulating materials utilized in thermal barriers <u>radiant floor heating systems</u> shall be installed such that the manufacturer's R-value mark is readily observable upon inspection.</p>		X			Clarification																
M112-18	<p>Change existing definition for TABLE 1210.4 and 1210.5 to:</p> <p style="text-align: center;">TABLE 1210.4 GROUND-SOURCE LOOP PIPE</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD (see Chapter 15)</th> </tr> </thead> <tbody> <tr> <td>Chlorinated polyvinyl chloride (CPVC)</td> <td>ASTM D2846; ASTM F441; ASTM F442</td> </tr> <tr> <td>Cross-linked polyethylene (PEX)</td> <td>ASTM F876; CSA B137.5; <u>CSA C448</u></td> </tr> <tr> <td>Polyethylene/aluminum/polyethylene (PE-AL-PE) pressure pipe</td> <td>ASTM F1282; CSA B137.9</td> </tr> </tbody> </table>	MATERIAL	STANDARD (see Chapter 15)	Chlorinated polyvinyl chloride (CPVC)	ASTM D2846; ASTM F441; ASTM F442	Cross-linked polyethylene (PEX)	ASTM F876; CSA B137.5; <u>CSA C448</u>	Polyethylene/aluminum/polyethylene (PE-AL-PE) pressure pipe	ASTM F1282; CSA B137.9		X			Necessary addition for clarification								
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Copper or copper-alloy tube (Type K, L or M)	ASTM B75; ASTM B88; ASTM B135; ASTM B251																													
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pressure pipe	ASTM F1281; CSA CAN/CSA-B-137.10																													
Cross-linked polyethylene (PEX) tubing	ASTM F876; <u>CSA B137.5</u>																													
Ductile iron pipe	AWWA C115/A21.15; AWWA																													
Lead pipe	FSWW-P-325B																													
Polyethylene/aluminum/polyethylene (PE-AL-PE) pressure pipe	ASTM F1282; CSA B137.9																													
Polypropylene (PP) plastic pipe	ASTM F2389																													
Polyvinyl chloride (PVC)	ASTM D1785; ASTM D2241																													

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE										
		Decrease	None	Increase												
Sub Code:																
	<table border="1"> <tr> <td>Raised temperature polyethylene (PE-RT)</td> <td>ASTM F2623; ASTM F2769; CSA B137.18;</td> </tr> <tr> <td>Steel pipe</td> <td>ASTM A53; ASTM A106</td> </tr> <tr> <td>Steel tubing</td> <td>ASTM A254</td> </tr> </table>	Raised temperature polyethylene (PE-RT)	ASTM F2623; ASTM F2769; CSA B137.18;	Steel pipe	ASTM A53; ASTM A106	Steel tubing	ASTM A254									
Raised temperature polyethylene (PE-RT)	ASTM F2623; ASTM F2769; CSA B137.18;															
Steel pipe	ASTM A53; ASTM A106															
Steel tubing	ASTM A254															
M116-18	Change existing definition for 1203.7 to: 1203.7 CPVC plastic pipe. Joints between CPVC plastic pipe or fittings shall be <u>mechanical, solvent-cemented or threaded joints conforming to Section 1203.3.</u>		X			Clarification										
M117-18	Change existing definition for 1210.6.2 to: 1210.6.2 Preparation of pipe ends. Pipe shall be cut square, be reamed, and be free of burrs and obstructions. CPVC, PE, and PVC pipe shall be chamfered. Pipe ends shall have full-bore openings and shall not be undercut. <u>be prepared in accordance with manufacturer's instructions.</u>		X			Clarification										
M118-18	Change existing definition for 1210.8 to: 1210.8 Installation. Piping, valves, fittings, and connections shall be installed in accordance with the conditions of approval <u>manufacturer's instructions.</u>		X			Clarification										
M119-18 Part II	Change existing definition for 1210.8 to: M2103.1 Piping materials. Piping for embedment in concrete or gypsum materials shall be standard-weight steel pipe, copper and copper-alloy pipe and tubing, cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pressure pipe, chlorinated polyvinyl chloride (CPVC), polybutylene, cross-linked polyethylene (PEX) tubing, polyethylene of raised temperature (PE-RT) or polypropylene (PP) with a rating of not less than 100-80 <u>psi at 180°F (690-552 kPa at 82°C).</u>		X			Clarification										
M120-18	Change existing definition for TABLE 1302.3 to: 1302.9 Corrugated stainless steel tubing containment Piping systems. Corrugated stainless steel tubing that is factory installed within a non-metallic containment. <u>Aboveground pipe systems shall be listed and labeled in accordance with UL 1369. Underground pipe systems shall be listed and labeled in accordance with or UL 971A.</u>	X			Minimal	Clarification										
	<p style="text-align: center;">TABLE 1302.3 FUEL OIL PIPING</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD (see Chapter 15)</th> </tr> </thead> <tbody> <tr> <td>Copper or copper-alloy pipe</td> <td>ASTM B42; ASTM B43; ASTM B302</td> </tr> <tr> <td>Copper or copper-alloy tubing (Type K, L or M)</td> <td>ASTM B75; ASTM B88; ASTM B280; ASME B16.51</td> </tr> <tr> <td>Labeled pipe</td> <td>(See Section 1302.4)</td> </tr> <tr> <td>Nonmetallic pipe</td> <td>ASTM D2996</td> </tr> </tbody> </table>	MATERIAL	STANDARD (see Chapter 15)	Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302	Copper or copper-alloy tubing (Type K, L or M)	ASTM B75; ASTM B88; ASTM B280; ASME B16.51	Labeled pipe	(See Section 1302.4)	Nonmetallic pipe	ASTM D2996					
MATERIAL	STANDARD (see Chapter 15)															
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302															
Copper or copper-alloy tubing (Type K, L or M)	ASTM B75; ASTM B88; ASTM B280; ASME B16.51															
Labeled pipe	(See Section 1302.4)															
Nonmetallic pipe	ASTM D2996															

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE						
		Decrease	None	Increase								
Sub Code:												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Steel pipe</td> <td>ASTM A53; ASTM A106</td> </tr> <tr> <td>Steel tubing</td> <td>ASTM A254; ASTM A539</td> </tr> <tr> <td>Stainless steel tubing</td> <td>ASTM A240; UL1369; UL971A</td> </tr> </table>	Steel pipe	ASTM A53; ASTM A106	Steel tubing	ASTM A254; ASTM A539	Stainless steel tubing	ASTM A240; UL1369; UL971A					
Steel pipe	ASTM A53; ASTM A106											
Steel tubing	ASTM A254; ASTM A539											
Stainless steel tubing	ASTM A240; UL1369; UL971A											
M121-18	Change existing definition for SECTION 1301, 1302, and 1303 to: 1302.8 Flexible connectors and hoses. Flexible connectors and hoses shall be listed and labeled <u>as being acceptable for the intended application for flammable and combustible liquids in accordance with UL 536.</u>		X			Clarification						
M127-18	Change existing definition for 1402.8.1.2 to: 1402.8.1.2 Rooftop-mounted solar thermal collectors and systems. The roof shall be constructed to support the loads imposed by roof-mounted solar collectors. Where mounted on or above the roof covering, the collector array, stanchions <u>mounting systems</u> and their attachments to the roof shall be constructed of noncombustible materials or fire-retardant-treated wood conforming to the International Building Code to the extent required for the type of roof construction of the building to which the collectors are accessory.		X			Clarification						
M128-18	Change existing definition for 1404.1 to: 1404.1 Collectors. Factory-built <u>solar thermal collectors</u> shall bear a label showing the manufacturer's name and address, model number and serial number <u>or certification number.</u>		X			Clarification						
ADM6-19	Change existing definition for IMC: [A] 101.2; IPC: [A] 101.2; IEBC: [A] 101.2; and IFGC: [A] 101.2; to: [A] 101.2 Scope. This code shall regulate the design, installation, maintenance, <i>alteration</i> and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions and related processes within buildings. This code shall also regulate those mechanical systems, system components, <i>equipment</i> and appliances specifically addressed herein. The installation of fuel gas distribution piping and <i>equipment</i> , fuel gas-fired appliances and fuel gas-fired <i>appliance</i> venting systems shall be regulated by the International Fuel Gas Code. Exception: Detached one- and two-family dwellings and multiple single family dwellings (townhouses) not more than three stories <u>high above grade plane in height</u> with <u>a separate means of egress</u> , and their accessory structures <u>not more than three stories above grade plane in height</u> , shall comply with <u>this code or the International Residential Code.</u> [A] 101.2 Scope. The provisions of this code shall apply to the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing systems within this jurisdiction. This code shall regulate		X			Clarification						

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel-gas-fired water heaters and water heater venting systems shall be regulated by the International Fuel Gas Code. Provisions in the appendices shall not apply unless specifically adopted.</p> <p>Exception: Detached one- and two-family dwellings and multiple single family dwellings (townhouses) not more than three stories <u>high above grade plane in height</u> with a separate means of egress, and their accessory structures <u>not more than three stories above grade plane in height</u>, shall comply with <u>this code</u> or the International Residential Code.</p> <p>[A] 101.2 Scope. The provisions of the this code shall apply to the <i>repair, alteration, change of occupancy, addition</i> to and relocation of <i>existing buildings</i>.</p> <p>Exception: Detached one- and two-family dwellings and multiple single family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height, shall comply with this code or the International Residential Code.</p> <p>[A] 101.2 Scope. This code shall apply to the installation of fuel-gas <i>piping</i> systems, fuel gas appliances, gaseous hydrogen systems and related accessories in accordance with Sections 101.2.1 through 101.2.5.</p> <p>Exception: Detached one- and two-family dwellings and multiple single family dwellings (townhouses) not more than three stories <u>high above grade plane in height</u> with a separate means of egress, and their accessory structures <u>not more than three stories above grade plane in height</u>, shall comply with <u>this code</u> or the International Residential Code.</p>					
ADM9-19 Part I	<p>Change existing definition for IBC: [A] 101.3; IFC: [A] 101.3; IEBC: [A] 101.3; IPC: [A] 101.3; IMC: [A] 101.3; IPSDC: [A] 101.6; IFGC: [A] 101.4; ISPC: [A] 101.3; IPMC: [A] 101.3; IZC: [A] 101.2; IWUIC: [A] 101.3; ICCPC: [A] 101.4 and [A] 101.4.1 to:</p> <p>2018 International Building Code</p> <p>[A] 101.3 Intent-Purpose. The purpose of this code is to establish the minimum requirements to provide a reasonable level of safety, public health and general welfare through structural strength, <i>means of egress facilities</i>, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire, explosion and other hazards, and to</p>		X			Clarification

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.</p> <p>2018 International Fire Code [A] 101.3 Intent. <u>Purpose.</u> The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.</p> <p>2018 International Existing Building Code [A] 101.3 Intent. <u>Purpose.</u> The intent purpose of this code is to provide flexibility to permit the use of alternative approaches to achieve compliance with minimum requirements to safeguard the public provide a reasonable level of safety, health, safety and general welfare insofar as they are affected by the <i>repair, alteration, change of occupancy, addition</i> and relocation of existing buildings.</p> <p>2018 International Plumbing Code 101.3 Intent. <u>Purpose.</u> The purpose of this code is to establish minimum standards requirements to provide a reasonable level of safety, health, property protection and public general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of plumbing equipment and systems.</p> <p>2018 International Mechanical Code [A] 101.3 Intent. <u>Purpose.</u> The purpose of this code is to establish minimum standards requirements to provide a reasonable level of safety, health, property protection and public general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of mechanical equipment or systems.</p> <p>2018 International Private Sewage Disposal Code [A] 101.6 Intent. <u>Purpose.</u> The purpose of this code is to establish minimum standards requirements to provide a reasonable level of safety health, property protection and public general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of <i>private sewage disposal systems</i>.</p> <p>2018 International Fuel Gas Code [A] 101.4 Intent. <u>Purpose.</u> The purpose of this code is to establish minimum standards requirements to provide a reasonable level of safety, health, property protection and public general welfare</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of fuel gas <u>equipment or systems</u>.</p> <p>2018 International Swimming Pool and Spa Code [A] 101.3 Intent. <u>Purpose.</u> The purpose of this code is to establish minimum standards-requirements <u>to provide a reasonable level of safety and protection of health, health, property protection and public general welfare</u> by regulating and controlling the design, construction, installation, quality of materials, location and maintenance or use of pools and spas.</p> <p>2018 International Property Maintenance Code [A] 101.3 Intent. <u>Purpose.</u> This code shall be construed to secure its expressed intent, which is to ensure public. <u>The purpose of this code is to establish minimum requirements to provide a reasonable level of health, safety and general welfare</u> insofar as they are affected by the continued <i>occupancy</i> and maintenance of structures and <i>premises</i>. Existing structures and <i>premises</i> that do not comply with these provisions shall be altered or repaired to provide a <u>reasonable</u> minimum level of health, <u>safety</u> and <u>safety general welfare</u> as required herein.</p> <p>2018 International Zoning Code [A] 101.2 Intent. <u>Purpose.</u> The purpose of this code is to <u>safeguard the health, property and public establish minimum requirements to provide a reasonable level of health, safety, property protection and welfare</u> by controlling the design, location, use or occupancy of all buildings and structures through the regulated and orderly development of land and land uses within this jurisdiction.</p> <p>2018 International Wildland-Urban Interface Code [A] 101.3 Objective. <u>Purpose.</u> The objective purpose <u>of this code is to establish minimum regulations consistent with nationally recognized good practice for the safeguarding of life and for property protection. Regulations in this code are intended to mitigate the risk to life and structures from intrusion of fire from wildland fire exposures and fire exposures from adjacent structures and to mitigate structure fires from spreading to wildland fuels. The extent of this regulation is intended to be tiered commensurate with the relative level of hazard present.</u></p> <p>2018 International Code Council Performance Code [A] 101.4 Intent. <u>Purpose.</u> [A] 101.4.1 Building. To <u>The purpose of this code is to provide an acceptable level of health, safety, and general welfare and to limit damage to property from events that are expected to impact</u></p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>buildings and structures. Accordingly, Part II of this code intends buildings and structures to provide for the following:</p> <ol style="list-style-type: none"> 1. An environment free of unreasonable risk of death and injury from fires. 2. A structure that will withstand loads associated with normal use and of the severity associated with the location in which the structure is constructed. 3. Means of egress and access for normal and emergency circumstances. 4. Limited spread of fire both within the building and to adjacent properties. 5. Ventilation and sanitation facilities to maintain the health of the occupants. 6. Natural light, heating, cooking and other amenities necessary for the well being of the occupants. 7. Efficient use of energy. 8. Safety to fire fighters and emergency responders during emergency operations. 					
ADM16-19 Part I	<p>Change existing definition for IBC: SECTION 103; IFC: SECTION 103; IPC: SECTION 103; IMC: SECTION 103; IFGC: SECTION 103; IEBC: SECTION 103; ISPC: SECTION 103; IPMC: SECTION 103; IPSDC: SECTION 103 and IWUIC: SECTION 103 to:</p> <p>2018 International Building Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE AGENCY</u></p> <p>[A] 103.1 Creation of enforcement agency. The Department of Building Safety <u>[INSERT NAME OF DEPARTMENT]</u> is hereby created and the official in charge thereof shall be known as the building official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The <i>building official</i> shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the building official shall have the authority to appoint a deputy building official, the other related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the building official. For the maintenance of existing properties, see the International Property Maintenance Code.</p> <p>2018 International Fire Code SECTION 103</p>		X		Clarification	

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE AGENCY</u></p> <p>[A] 103.1 General-Creation of agency. The department of fire prevention is established within the jurisdiction under the direction of the <i>fire code official</i>. <u>[INSERT NAME OF DEPARTMENT]</u> is hereby created and the official in charge thereof shall be known as the fire code official. The function of the department <u>agency</u> shall be the implementation, administration and enforcement of the provisions of this code.</p> <p>[A] 103.2 Appointment. The <i>fire code official</i> shall be appointed by the chief appointing authority of the jurisdiction. and the fire code official shall not be removed from office except for cause and after full opportunity to be heard on specific and relevant charges by and before the appointing authority.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the fire code official shall have the authority to appoint a deputy fire code official, other related technical officers, inspectors and other employees. <u>Such employees shall have powers as delegated by the fire code official.</u></p> <p>[A] 103.4-104.7 Liability. The <i>fire code official</i>, member of the board of appeals, officer or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4-104.7.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The fire code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code; and any officer of the department of fire prevention, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.</p> <p>2018 International Plumbing Code SECTION 103</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE AGENCY</u></p> <p>103.1 General-<u>Creation of agency.</u> The department of plumbing inspection [INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p> <p>103.4 <u>104.8</u> Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.</p> <p>103.4.1 <u>104.8.1</u> Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Mechanical Code</p> <p style="text-align: center;">SECTION 103</p> <p><u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE AGENCY</u></p> <p>[A] 103.1 General-<u>Creation of agency.</u> The department of mechanical inspection [INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p> <p>[A] 103.4-104.8 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4-104.8.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Fuel Code</p> <p style="text-align: center;">SECTION 103</p> <p style="text-align: center;"><u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE</u></p> <p style="text-align: center;"><u>AGENCY</u></p> <p>[A] 103.1 General Creation of agency. The Department of Inspection [INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p>					

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
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	<p>[A] 103.4-104.8 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.8.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Existing Building Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY-CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>[A] 103.1 Creation of enforcement agency. The Department of Building Safety [INSERT NAME OF DEPARTMENT] is hereby created, and the official in charge in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The <i>code official</i> shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, the other related technical officers, inspectors, plan examiners, and other employees. Such employees shall have powers as delegated by the code official.</p> <p>2018 International Swimming Pool and Spa Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY-CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>[A] 103.1 Creation of enforcement agency. The department of building safety [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the code official. <u>The function of the agency shall be the</u></p>					

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		Decrease	None	Increase		
Sub Code:						
	<p>implementation, administration and enforcement of the provisions of this code.</p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of the jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, the other related technical officers, inspectors, plans examiners and other employees. Such employees shall have powers as delegated by the code official.</p> <p>[A] 103.4-104.8 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.8.1 Legal defenses. Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Property Maintenance Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>[A] 103.1 General-<u>Creation of agency.</u> The department of property maintenance inspection-[INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy (s)- code official, other related technical officers,</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>inspectors and other employees. Such employees shall have powers as delegated by the code official.</u></p> <p>[A] 103.4-104.7 Liability. The <i>code official</i>, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4-104.7.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Private Sewage Disposal Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>[A] 103.1 General-Creation of agency. The Department of Private Sewage Disposal Inspection [INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of the this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p> <p>[A] 103.4-104.7 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>property as a result of any act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.7.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Wildland-Urban Interface Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>[A] 103.1 Creation of enforcement agency. The department of [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy(s) <u>deputy code official, other related technical officers, inspectors and other employees.</u> Such employees shall have powers as delegated by the code official.</p>					
ADM27-19	<p>Add new definition for SECTION 107 FEES, 107.2 Schedule of Permit fees, 107.3 Permit valuations, 107.5 Related fees and 107.6 Refunds as follows:</p> <p>2018 International Mechanical Code SECTION 107 FEES</p> <p><u>107.2 Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p><u>107.3 Permit valuations.</u> The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as mechanical equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can</p>		X			It helps correlate all the I-Codes together and makes it easier to understand where the requirements are located.

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>show detailed estimates to meet the approval of the code official. <u>Final building permit valuation shall be set by the code official.</u> 107.5 Related fees. The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law. 107.6 Refunds. The code official is authorized to establish a refund policy.</p> <p>Change existing definition for [A] 106.5 Fees and [A] 106.5.1 Work commencing before permit issuance to: [A] 106.5-107.1 Fees- Payment of fees. A permit shall not be issued valid until the fees prescribed in Section 106.5-2 by law have been paid., nor shall an amendment to a permit shall not be released until the additional fee, if any, due to an increase of the mechanical system, has been paid. [A] 106.5-1-107.4 Work commencing before permit issuance. Any person who commences any work on a mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit fee a fee established by the code official that shall be in addition to the required permit fees.</p> <p>Delete existing definition for [A] 106.5.2 Fee schedule and [A] 106.5.3 Fee refunds.</p> <p>Add new definition for SECTION 107 FEES, 107.2 Schedule of Permit fees, 107.5 Related fees and 107.6 Refunds as follows: 2018 International Plumbing Code SECTION 107 FEES 107.2 Schedule of permit fees. Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority. 107.5 Related fees. The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law. 107.6 Refunds. The code official is authorized to establish a refund policy.</p> <p>Change existing definition for [A] 106.6 Fees and [A] 106.6.1 Work commencing before permit issuance to: 106.6-107.1 Fees- Payment of fees. A permit shall not be issued valid until the fees prescribed in Section 106.6-2 by law have been paid., and an amendment to a permit shall not be</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>released until the additional fee, if any, due to an increase of the plumbing systems, has been paid.</p> <p>106.6.1-107.4 Work commencing before permit issuance. Any person who commences any work on a plumbing-mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit-a fee established by the code official that shall be in addition to the required permit fees.</p> <p>Delete existing definition for [A] 106.5.2 Fee schedule and 106.6.3 Fee refunds.</p> <p>Add new definition for SECTION 104 FEES and 104.2 Refunds as follows:</p> <p>2018 International Property Maintenance Code SECTION 104 FEES</p> <p>104.2 Refunds. <u>The code official is authorized to establish a refund policy.</u></p> <p>Change existing definition for [A] 103.5 Fees to:</p> <p>[A] 103.5-104.1 Fees. The fees for activities and services performed by the department in carrying out its responsibilities under this code shall be as indicated in the following schedule established by the <u>applicable governing authority.</u></p> <p>[JURISDICTION TO INSERT APPROPRIATE SCHEDULE.]</p> <p>Add new definition for SECTION 107 FEES, 107.2 Refunds, 107.3 Permit valuations, 107.5 Related fees and 107.6 Refunds as follows:</p> <p>2018 International Fuel Gas Code SECTION 107 FEES</p> <p>107.2 Schedule of permit fees. <u>Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</u></p> <p>107.3 Permit valuations. <u>The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as plumbing equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official.</u></p> <p>107.5 Related fees. <u>The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not</u></p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p>107.6 Refunds. The code official is authorized to establish a refund policy.</p> <p>Change existing definition for [A] 106.6 Fees and [A] 106.6.1 Work commencing before permit issuance to:</p> <p>[A] 106.6 107.1 Fees. Payment of fees. A permit shall not be issued valid until the fees prescribed in Section 106.6.2 by law have been paid., nor shall an An amendment to a permit shall not be released until the additional fee, if any, due to an increase of the installation, has been paid.</p> <p>[A] 106.6.1 107.4 Work commencing before permit issuance. Any person who commences any work on an installation a mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit fee a fee established by the code official that shall be in addition to the required permit fees.</p> <p>Delete existing definition for [A] 106.6.2 Fee schedule and 106.6.3 Fee refunds.</p> <p>Add new definition for SECTION 106 FEES, 106.2 Refunds, 106.3 Permit valuations, 106.5 Related fees and 106.6 Refunds as follows:</p> <p>2018 International Swimming Pool and Spa Code SECTION 106 FEES</p> <p>106.2 Schedule of permit fees. Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p>106.3 Permit valuations. The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as mechanical equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official.</p> <p>106.5 Related fees. The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p>106.6 Refunds. The code official is authorized to establish a refund policy.</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Change existing definition for [A] 105.6 Fees and [A] 105.6.1 Work commencing before permit issuance to:</p> <p>[A] 105.6.106.1 Fees. Payment of fees. A permit shall not be valid until the fees prescribed by law have been paid. An amendment to a permit shall not be released until the additional fee, if any, has been paid.</p> <p>[A] 105.6.1.106.4 Work commencing before permit issuance. Any person who commences any work on a <u>mechanical</u> system before obtaining the necessary permits shall be subject to a fee as indicated in the adopted fee schedule and would established by the code official that shall be in addition to the required permit fees.</p> <p>Delete existing definition for [A] 105.6.2 Fee schedule and 105.6.3 Fee refunds.</p>					
ADM28-19	<p>Change existing definition for SECTION 107 to:</p> <p style="text-align: center;">2018 International Building Code SECTION 107 <u>SUBMITTAL CONSTRUCTION DOCUMENTS</u></p> <p>Change existing definition for SECTION 107 to:</p> <p style="text-align: center;">2018 International Fire Code SECTION 107 <u>CONSTRUCTION DOCUMENTS</u></p> <p>[A] 105.4.1.106.1 Submittals. <i>Construction documents</i> and supporting data shall be submitted in two or more sets with each application for a permit and in such form and detail as required by the <i>fire code official</i>. The <i>construction documents</i> shall be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.</p> <p>Exception: The <i>fire code official</i> is authorized to waive the submission of <i>construction documents</i> and supporting data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that review of <i>construction documents</i> is not necessary to obtain compliance with this code.</p> <p>[A] 105.4.1.1.106.2 Examination of documents. The <i>fire code official</i> shall examine or cause to be examined the accompanying <i>construction documents</i> and shall ascertain by such examinations whether the work indicated and described is in accordance with the requirements of this code.</p> <p>[A] 105.4.2.106.2.1 Information on construction documents. <i>Construction documents</i> shall be drawn to scale on suitable material. Electronic media documents are allowed to be submitted where <i>approved</i> by the <i>fire code official</i>. <i>Construction</i></p>		X		Clarification	

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><i>documents</i> shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations as determined by the <i>fire code official</i>.</p> <p>[A] 105.4.2.1 106.2.2 Fire protection system shop drawings. Shop drawings for the fire protection system(s) shall be submitted to indicate compliance with this code and the <i>construction documents</i>, and shall be <i>approved</i> prior to the start of installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9.</p> <p>[A] 105.4.3 106.2.3 Applicant responsibility. It shall be the responsibility of the applicant to ensure that the <i>construction documents</i> include all of the fire protection requirements and the shop drawings are complete and in compliance with the applicable codes and standards.</p> <p>[A] 105.4.4 106.2.4 Approved documents. <i>Construction documents approved</i> by the <i>fire code official</i> are approved with the intent that such <i>construction documents</i> comply in all respects with this code. Review and approval by the <i>fire code official</i> shall not relieve the applicant of the responsibility of compliance with this code.</p> <p>[A] 105.4.4.1 106.2.4.1 Phased approval. The <i>fire code official</i> is authorized to issue a permit for the construction of part of a structure, system or operation before the <i>construction documents</i> for the whole structure, system or operation have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for parts of a structure, system or operation shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure, system or operation will be granted.</p> <p>[A] 105.4.5 106.3 Amended construction documents. Work shall be installed in accordance with the <i>approved construction documents</i>, and any changes made during construction that are not in compliance with the <i>approved construction documents</i> shall be resubmitted for approval as an amended set of <i>construction documents</i>.</p> <p>[A] 105.4.6 106.4 Retention of construction documents. One set of <i>construction documents</i> shall be retained by the <i>fire code official</i> for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall be</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>Delete existing definition for [A] 105.4 Construction documents.</p> <p>Change existing definition for SECTION 107 to:</p> <p>2018 International Plumbing Code</p> <p style="text-align: center;"><u>SECTION 107</u></p> <p style="text-align: center;"><u>CONSTRUCTION DOCUMENTS</u></p> <p>106.3.1 107.1 Construction documents. Construction documents, engineering calculations, diagrams and other such data shall be submitted in two or more sets with each application for a permit. The code official shall require construction documents, computations and specifications to be prepared and designed by a registered design professional where required by state law. Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. Construction documents for buildings more than two stories in height shall indicate where penetrations will be made for pipes, fittings and components and shall indicate the materials and methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception: The code official shall have the authority to waive the submission of construction documents, calculations or other data if the nature of the work applied for is such that reviewing of construction documents is not necessary to determine compliance with this code.</p> <p>106.5.6 107.2 Retention of construction documents. One set of <i>approved</i> construction documents shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws.</p> <p>One set of <i>approved</i> construction documents shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>Change existing definition for SECTION 107 to:</p> <p>2018 International Mechanical Code</p> <p style="text-align: center;"><u>SECTION 107</u></p> <p style="text-align: center;"><u>CONSTRUCTION DOCUMENTS</u></p> <p>[A] 106.3.1 107.1 Construction documents. <i>Construction documents, engineering calculations, diagrams and other data</i></p>					

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>shall be submitted in two or more sets with each application for a permit. The code official shall require <i>construction documents</i>, computations and specifications to be prepared and designed by a <i>registered design professional</i> where required by state law. Where special conditions exist, the code official is authorized to require additional <i>construction documents</i> to be prepared by a <i>registered design professional</i>. <i>Construction documents</i> shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. <i>Construction documents</i> for buildings more than two stories in height shall indicate where penetrations will be made for mechanical systems, and the materials and methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception: The code official shall have the authority to waive the submission of <i>construction documents</i>, calculations or other data if the nature of the work applied for is such that reviewing of <i>construction documents</i> is not necessary to determine compliance with this code.</p> <p>[A] 106.4.6 107.2 Retention of construction documents. One set of <i>approved construction documents</i> shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall be returned to the applicant, and said set shall be kept on the site of the building or job at all times during which the work authorized thereby is in progress.</p> <p>Change existing definition for SECTION 107 to: 2018 International Fuel Gas Code <u>SECTION 107</u> <u>CONSTRUCTION DOCUMENTS</u></p> <p>[A] 106.3.1 107.1 Construction documents. <i>Construction documents</i>, engineering calculations, diagrams and other data shall be submitted in two or more sets with each application for a permit. The code official shall require <i>construction documents</i>, computations and specifications to be prepared and designed by a registered design professional where required by state law. <i>Construction documents</i> shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. <i>Construction documents</i> for buildings more than two stories in height shall indicate where penetrations will be made for installations and shall indicate the materials and</p>					

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		Decrease	None	Increase		
	<p>methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception:</p> <p>The code official shall have the authority to waive the submission of <i>construction documents</i>, calculations or other data if the nature of the work applied for is such that reviewing of <i>construction documents</i> is not necessary to determine compliance with this code.</p> <p>[A] 106.5.6-107.2 Retention of construction documents. One set of <i>approved construction documents</i> shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>Change existing definition for SECTION 106 to: 2018 International Swimming Pool and Spa Code <u>SECTION 106</u> <u>CONSTRUCTION DOCUMENTS</u></p> <p>[A] 105.3-106.1 Construction documents. Construction documents, engineering calculations, diagrams and other such data shall be submitted in two or more sets with each application for a permit. The code official shall require construction documents, computations and specifications to be prepared and designed by a registered design professional where required by state law. Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code.</p> <p>[A] 105.5.6-106.2 Retention of construction documents. One set of <i>approved construction documents</i> shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>Change existing definition for SECTION 107 to: 2018 International Private Sewage Disposal Code <u>SECTION 107</u> <u>CONSTRUCTION DOCUMENTS</u></p> <p>[A] 106.2.1-107.1 Construction documents. An application for a permit shall be accompanied by not less than two copies of</p>					

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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		Sub Code:				
	<p>construction documents drawn to scale, with sufficient clarity and detail dimensions showing the nature and character of the work to be performed. Specifications shall include pumps and controls, dose volume, elevation differences (vertical lift), pipe friction loss, pump performance curve, pump model and pump manufacturer. The code official is permitted to waive the requirements for filing construction documents where the work involved is of a minor nature. Where the quality of the materials is essential for conformity to this code, specific information shall be given to establish such quality, and this code shall not be cited, or the term "legal" or its equivalent used as a substitute for specific information.</p> <p>[A] 106.3.6-107.2 Retention of construction documents. One set of approved construction documents shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of approved construction documents shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>Change existing definition for SECTION 108 to: 2018 International Wildland-Urban Interface Code SECTION 108 <u>PLANS AND SPECIFICATIONS CONSTRUCTION DOCUMENTS</u></p>					
ADM31-19 Part I	<p>Add new definition for SECTION 108 NOTICE OF APPROVAL as follows: 2018 International Plumbing Code SECTION 108 <u>NOTICE OF APPROVAL</u></p> <p>Change existing definition for 107.5 Approval and 107.5.1 to: 107.5-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. 107.5.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new definition for SECTION 108 NOTICE OF APPROVAL as follows: 2018 International Mechanical Code</p>		X			Provides consistency through the I- Codes by using standard terminology and it is also consistent with previous actions.

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		Decrease	None	Increase		
Sub Code:						
	<p style="text-align: center;">SECTION 108 NOTICE OF APPROVAL</p> <p>Change existing definition for 107.4 Approval and 107.4.1 to: [A] 107.4-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. [A] 107.4.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new definition for SECTION 108 NOTICE OF APPROVAL as follows: 2018 International Fuel Gas Code SECTION 108 NOTICE OF APPROVAL</p> <p>Change existing definition for 107.4 Approval and 107.4.1 to: [A] 107.4-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. [A] 107.4.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied or where it is determined that the building or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>Add new definition for SECTION 107 NOTICE OF APPROVAL as follows: 2018 International Swimming Pool and Spa Code SECTION 107 NOTICE OF APPROVAL</p> <p>Change existing definition for 107.4 Approval and 107.4.1 to: [A] 106.17-107.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. [A] 106.17.1-107.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of the incorrect information supplied, or where it is determined that the building or structure, premise, system or</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>portion thereof is in violation of any ordinance or regulation or any of the provisions of this code. Add new definition for SECTION 108 NOTICE OF APPROVAL as follows: 2018 International Private Sewage Disposal Code SECTION 108 NOTICE OF APPROVAL Change existing definition for 107.7 Approval and 107.7.1 to: [A] 107.7-108.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. [A] 107.7.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p>					
ADM40-19 Part I	<p>Change existing definition for SECTION 113 to: 2018 International Building Code SECTION 113 BOARD MEANS OF APPEALS [A] 113.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the building official. [A] 113.2 Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good <u>equivalent</u> or better form of construction is proposed. The board shall not have authority to waive requirements of this <u>code or interpret the administration of this</u> code. [A] 113.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p>		X			Improves the language to correlate all the I-Codes.

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Add new definition for SECTION 113.4 Administration as follows: <u>113.4 Administration.</u> <u>The building official shall take immediate action in accordance with the decision of the board.</u> Change existing definition for SECTION 112 to: 2018 International Existing Building Code <u>SECTION 112</u> <u>BOARD MEANS OF APPEALS</u> [A] 112.1 General. In order to hear and decide appeals of orders, decisions , or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the <u>applicable governing body authority</u> and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall <u>render all decisions and findings in writing to the appellant with a duplicate copy to the building official.</u> [A] 112.2 Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply , or an <u>equally good equivalent</u> or better form of construction is proposed. The board shall not have authority to waive requirements of this <u>code or interpret the administration of this code.</u> [A] 112.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. Add new definition for SECTION 113.4 Administration as follows: <u>113.4 Administration.</u> <u>The code official shall take immediate action in accordance with the decision of the board.</u> Change existing definition for SECTION 109 to: 2018 International Fire Code <u>SECTION 109</u> <u>BOARD MEANS OF APPEALS</u> [A] 109.1 Board of appeals established. In order to hear and decide appeals of orders, decisions or determinations made by the fire code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the <u>applicable governing body authority</u> and shall hold office at its pleasure. The fire code official shall be an ex officio member of said board but shall not have a vote on any matter before the</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>board-The board shall adopt rules of procedure for conducting its business , and shall render all decisions and findings in writing to the appellatant with a duplicate copy to the fire code official.</p> <p>[A] 109.2 Limitations on authority. An application for appeal shall be based on a claim that the <u>true</u> intent of this code or the rules legally adopted hereunder<u>thereunder</u> have been incorrectly interpreted, the provisions of this code do not fully apply , or an equivalent method of protection or safety or better <u>form of construction</u> is proposed. The board shall not have authority to waive requirements of this <u>code</u> or <u>interpret the administration of this code</u>.</p> <p>[A] 109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to hazards of fire, explosions, hazardous conditions or <i>fire protection systems</i>, and are not employees of the jurisdiction.</p> <p>Add new definition for SECTION 109.4 Administration as follows:</p> <p><u>109.4 Administration.</u> The fire code official shall take immediate action in accordance with the <u>decision</u> of the board.</p> <p>Change existing definition for SECTION 106 to:</p> <p>2018 International Wildland-Urban Interface Code</p> <p style="text-align: center;">SECTION 106 MEANS OF APPEALS</p> <p>[A] 106.1 General. To determine the suitability of alternative materials and methods and to provide for reasonable interpretations of the provisions. <u>In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code,</u> there shall be and is hereby is created a board of appeals consisting of five members who are qualified by experience and training to pass judgment on pertinent matters. The code official, building official and fire chief shall be ex officio members, and the code official shall act as secretary of the board. The appeals. <u>The board of appeals shall be appointed by the legislative body applicable governing authority and shall hold office at their discretion.</u> its pleasure. The board shall adopt reasonable rules and regulations of <u>procedure</u> for conducting its investigations business and shall render <u>all</u> decisions and findings in writing to the code official, appellatant with a duplicate copy to the applicant code official.</p> <p>[A] 106.2 Limitations of authority. The board of appeals shall not have authority relative to interpretation of the administrative provisions of this code and <u>An application for appeal shall be</u></p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>based on <u>a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equivalent or better form of construction is proposed.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>106.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>Add new definition for SECTION 106.3 Qualifications as follows: 106.3 Qualifications. The board of appeals shall consist of <u>members who are qualified by experience and training and are not employees of the jurisdiction.</u></p> <p>Change existing definition for SECTION 109 and 110 to: 2018 International Plumbing Code SECTION 109 MEANS OF APPEAL-APPEALS 109.1109.2 Application for appeal- Limitations on authority. Any person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply , or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code. 109.3 Qualifications. The board of appeals shall consist of <u>members who are qualified by experience and training and are not employees of the jurisdiction.</u> 109.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>SECTION 110 BOARD OF APPEALS 109.2-110.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed. Add new definition for SECTION 109.1 General as follows: 109.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and</p>					

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>Change existing definition for SECTION 109 and 110 to: 2018 International Mechanical Code SECTION 109 MEANS OF APPEAL-APPEALS [A] 109.1-109.2 Application for appeal- Limitations on authority. A person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code. 109.4 Administration The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 110 BOARD OF APPEALS</p> <p>[A] 109.2-110.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years; and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>Add new definition for SECTION 109.1 General and 109.3 Qualifications as follows: 109.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>109.3 Qualifications.</u> The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>Delete existing definition for [A] 109.1.1 Limitation of authority.</p> <p>Change existing definition for SECTION 109 to:</p> <p>2018 International Fuel Gas Code</p> <p style="text-align: center;">SECTION 109 (IFGC)</p> <p style="text-align: center;">MEANS OF APPEAL</p> <p><u>109.1 General.</u> In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>[A] 109.1109.2 Application for appeal. Limitations on authority. A person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>109.3 Qualifications.</u> The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p><u>109.4 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 110</p> <p style="text-align: center;">BOARD OF APPEALS</p> <p>[A] 109.2-110.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>Change existing definition for SECTION 108 and 109 to:</p> <p>2018 International Swimming Pool and Spa Code</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p style="text-align: center;">SECTION 108 MEANS OF APPEAL</p> <p>108.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>[A] 108.1-108.2 Application for appeal. Limitations on authority. Any person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>108.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>108.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 109 BOARD OF APPEALS</p> <p>[A] 108.2-109.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>Change existing definition for SECTION 111 and 112 to: 2018 International Property Maintenance Code</p> <p style="text-align: center;">SECTION 111 MEANS OF APPEAL</p> <p>111.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall</p>					

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>[A] 111.1111.2 Application for appeal. Limitations on authority. Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to appeal to the board of appeals, provided that a written application for appeal is filed within 20 days after the day the decision, notice or order was served. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or the or an equivalent or better form of construction is proposed. The board shall not have authority to waive requirements of this code are adequately satisfied by other means, or interpret the administration of this code.</p> <p><u>Qualifications.</u> The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p><u>Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 111.8-111.5 Stays of enforcement. Appeals of notice and orders (other than <i>Imminent Danger</i> notices) shall stay the enforcement of the notice and order until the appeal is heard by the appeals board.</p> <p style="text-align: center;">SECTION 112 BOARD OF APPEALS</p> <p>[A] 111.2-112.1 Membership of board. The board of appeals shall consist of not less than three members who are qualified by experience and training to pass on matters pertaining to property maintenance and who are not employees of the jurisdiction. The code official shall be an ex-officio member but shall not vote on any matter before the board. The board shall be appointed by the chief appointing authority and shall serve staggered and overlapping terms.</p> <p>Change existing definition for SECTION 109 and 110 to: 2018 International Private Sewage Disposal Code SECTION 109 MEANS OF APPEAL <u>109.1 General.</u> In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>[A] 109.1-109.2 Application for appeal. Limitations on authority. Any person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder has have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>109.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 110 BOARDS OF APPEALS</p> <p>[A] 109.2-110.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p>					
ADM41-19 Part I	<p>Change existing definition for SECTION 115 to:</p> <p>2018 International Building Code SECTION 115 STOP WORK ORDER</p> <p>[A] 115.1 Authority. Where the <i>building official</i> finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or <u>in a dangerous or unsafe manner</u>, the <i>building official</i> is authorized to issue a stop work order.</p> <p>[A] 115.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, the owner's authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for</p>		X			Standardizes the language and requirements for a stop work order throughout the family of I-Codes.

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>the order and the conditions under which the cited work will be permitted is authorized to resume.</p> <p>115.3 Emergencies. Where an emergency exists, the building official shall not be required to give a <u>written notice prior to stopping the work.</u></p> <p>[A] 115.3 115.4 Unlawful continuance. Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law. <u>penalties established by the authority having jurisdiction.</u></p> <p>Change existing definition for SECTION 112 to: 2018 International Fire Code SECTION 112 STOP WORK ORDER [A] 112.1 Order-Authority. Where the <i>fire code official</i> finds any work regulated by this code being performed in a manner contrary to the provisions of this code, or in a dangerous or unsafe manner, the <i>fire code official</i> is authorized to issue a stop work order. [A] 112.2 Issuance. A-The stop work order shall be in writing and shall be given to the owner of the property, or to the owner's authorized agent, or to the person doing performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work is authorized to resume. [A] 112.3 Emergencies. Where an emergency exists, the fire code official shall not be required to give a written notice prior to stopping the work. [A] 112.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars. <u>subject to fines established by the authority having jurisdiction.</u></p> <p>Change existing definition for SECTION 108 to: 2018 International Plumbing Code SECTION 108 VIOLATIONS Delete existing definition for 108.5 Stop work orders. Add new definition for SECTION 109 as follows: SECTION 109 STOP WORK ORDER</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>Authority.</u> Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</p> <p><u>109.2 Issuance.</u> The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</p> <p><u>109.3 Emergencies.</u> Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p> <p><u>109.4 Failure to comply.</u> Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</p> <p>Change existing definition for SECTION 108 to: 2018 International Mechanical Code SECTION 108 VIOLATIONS</p> <p>Delete existing definition for [A] 108.5 Stop work orders. Add new definition for SECTION 109 as follows: SECTION 109 STOP WORK ORDER</p> <p><u>109.1 Authority.</u> Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</p> <p><u>109.2 Issuance.</u> The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</p> <p><u>109.3 Emergencies.</u> Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p> <p><u>109.4 Failure to comply.</u> Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Change existing definition for SECTION 108 to:</p> <p>2018 International Fuel Gas Code SECTION 108 (IFGC) VIOLATIONS</p> <p>Delete existing definition for [A] 108.5 Stop work orders. Add new definition for SECTION 109 as follows:</p> <p style="text-align: center;"><u>SECTION 109</u> <u>STOP WORK ORDER</u></p> <p><u>109.1 Authority.</u> Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</p> <p><u>109.2 Issuance.</u> The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</p> <p><u>109.3 Emergencies.</u> Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p> <p><u>109.4 Failure to comply.</u> Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</p> <p>Change existing definition for SECTION 114 to:</p> <p>2018 International Existing Building Code SECTION 114 STOP WORK ORDER</p> <p>[A] 114.1 Authority. Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</p> <p>[A] 114.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, the owner’s authorized agent or to the person doing performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted is authorized to resume.</p> <p>[A] 114.3 114.4 Unlawful continuance. Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is</p>					

Table 4. 2021 IMC Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p>[A] 112.2 Issuance. AThe stop work order shall be in writing and shall be given to the owner of the property, tothe owner’s authorized agent, or tothe person doingperforming the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</p> <p>[A] 112.3 Emergencies. Where an emergency exists, the <i>code official</i> shall not be required to give a written notice prior to stopping the work.</p> <p>[A] 112.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars. <u>subject to fines established by the authority having jurisdiction.</u></p> <p>Change existing definition for SECTION 108 to: 2018 International Private Sewage Disposal Code SECTION 108 VIOLATIONS</p> <p>Delete existing definition for [A] 108.5 Stop work orders. Add new definition for SECTION 109 as follows: SECTION 109 STOP WORK ORDER</p> <p><u>109.1 Authority.</u> <u>Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</u></p> <p><u>109.2 Issuance.</u> <u>The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</u></p> <p><u>109.3 Emergencies.</u> <u>Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</u></p> <p><u>109.4 Failure to comply.</u> <u>Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</u></p> <p>Change existing definition for SECTION 114 to: 2018 International Wildland-Urban Interface Code</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p style="text-align: center;">SECTION 114 STOP WORK ORDER</p> <p>[A] 114.1 Authority. Where the code official finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or <u>in a dangerous or unsafe manner</u>, the code official is authorized to issue a stop work order.</p> <p>[A] 114.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, to the owner's authorized agent or to the person doing performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted is authorized to resume.</p> <p>[A] 114.3 Emergencies. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p> <p>[A] 114.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars. subject to fines established by the authority having jurisdiction.</p>					
ADM43-19 Part I	<p>Change existing definition for APPENDIX B to:</p> <p style="text-align: center;">2018 International Building Code APPENDIX B BOARD OF APPEALS SECTION B101 GENERAL</p> <p>[A] B101.2 B101.3 Membership of board. The board of appeals shall consist of persons <u>five voting members</u> appointed by the chief appointing authority <u>of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board. as follows:</u></p> <ol style="list-style-type: none"> 1. One for 5 years; one for 4 years; one for 3 years; one for 2 years; and one for 1 year. 2. Thereafter, each new member shall serve for 5 years or until a successor has been appointed. 		X			Standardizes the language across the I-Codes, provides another tool and gives appropriate guidance as an appendix to establish a board of appeals.

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>The building official shall be an ex officio member of said board but shall have no vote on any matter before the board.</p> <p>[A] B101.2.2B101.3.1 Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction one from each of the following professions or disciplines:</u></p> <ol style="list-style-type: none"> 1. Registered design professional with architectural experience or a builder or superintendent of building construction with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering experience. 3. Registered design professional with mechanical and plumbing engineering experience or a mechanical contractor with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work. 4. Registered design professional with electrical engineering experience or an electrical contractor with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work. 5. Registered design professional with fire protection engineering experience or a fire protection contractor with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work. <p>[A] B101.2.1B101.3.2 Alternate members. The chief appointing authority shall is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for <u>5 years, the same term</u> or until a successor has been appointed.</p> <p>[A] B101.2.4B101.3.4 Chairperson. The board shall annually select one of its members to serve as chairperson.</p> <p>[A] B101.2.6B101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, <u>which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</u></p> <p>[A] B101.2.5B101.3.6 Disqualification Conflict of member interest. A member shall not hear an appeal in which that member has a <u>with any</u> personal, professional or financial</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>interest. <u>interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</u></p> <p>[A] B101.2.7 <u>B101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p>[A] B101.2.3 <u>B101.4 Rules and procedures.</u> The board is authorized to <u>shall</u> establish policies and procedures necessary to carry out its duties <u>consistent with the provisions of this code and applicable state law.</u> The procedures shall not require <u>compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</u></p> <p>[A] B101.3 <u>B101.5 Notice of meeting.</u> The board shall meet upon notice from the chairperson, within 10 days of the filing of an appeal or at stated periodic meetings.</p> <p>[A] B101.3.1 <u>B101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant's representative, the building official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>[A] B101.3.3 <u>B101.5.3 Postponed hearing.</u> When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.</p> <p>[A] B101.4 <u>B101.7 Board decision.</u> The board shall modify or reverse the decision of the <i>building official</i> by a concurring vote of two-thirds of its <u>members.</u> The board shall <u>only modify or reverse the decision of</u> the code official by a concurring vote of <u>three or more members.</u></p> <p>[A] B101.4.1 <u>B101.7.1 Resolution.</u> The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant's representative and to the building code official.</u></p> <p>[A] B101.4.2 <u>B101.7.2 Administration.</u> The <i>building official</i> shall take immediate action in accordance with the decision of the board.</p> <p>Delete existing definition for [A] B101.1 Application and [A] B101.3.2 Procedure.</p> <p>Add new definition for B101.1 Scope, B101.2 Application for appeal, B101.2.1 Limitation of authority, B101.2 Stays of enforcement, B101.3.3 Vacancies, B101.3.8 Removal from the board, B101.5.2 Quorum, B101.6 Legal counsel and B101.8 Court review as follows:</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>B101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 113 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the building official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>B101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the building official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the building official within 20 days after the notice was served.</p> <p><u>B101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>B101.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>B101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>B101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>B101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>B101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.</p> <p><u>B101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Add new definition for APPENDIX A as follows:</p> <p>2018 International Existing Building Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p>A101.1 Scope. A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 112. The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p>A101.2 Application for appeal. Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p>A101.2.1 Limitation of authority. The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>A101.2.2 Stays of enforcement. Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p>A101.3 Membership of board. The board shall consist of five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</p> <p>A101.3.1 Qualifications. The board shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p> <p>A101.3.2 Alternate members. The chief appointing authority is authorized to appoint two alternate members who shall be</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.4 Chairperson.</u> The board shall annually select one of its members to serve as chairperson.</p> <p><u>A101.3.5 Secretary.</u> The chief appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p><u>A101.3.6 Conflict of interest.</u> A member with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p><u>A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>A101.4 Rules and procedures.</u> The board shall establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</p> <p><u>A101.5 Notice of meeting.</u> The board shall meet upon notice from the chairperson, within 10 days of the filing of an appeal or at stated periodic intervals.</p> <p><u>A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant's representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.5.3 Postponed hearing.</u> When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p><u>A101.7 Board decision.</u> The board shall only modify or reverse the decision of the code official by a concurring vote of three or more members.</p> <p><u>A101.7.1 Resolution.</u> The decision of the board shall be by resolution. Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</p> <p><u>A101.7.2 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p><u>A101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Change existing definition for APPENDIX A to:</p> <p style="text-align: center;">2018 International Fire Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p>A101.1 Scope. A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of the International Fire Code this code pursuant to the provisions of Section 108 of the International Fire Code. 109. The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the fire code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>A101.3 Terms-Membership of office-board. Members shall be appointed for terms of 4 years. Members shall not be reappointed to serve more than two consecutive full terms. The board shall consist of five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member’s terms shall be staggered at intervals, so as to provide continuity. The fire code official shall be an ex officio member of said board but shall not vote on any matter before the board.</p> <p>A101.3.2-A101.3.3 Vacancies. Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made. Members appointed to fill a vacancy in an unexpired term shall be eligible for reappointment to two full terms.</p> <p>A101.5-A101.3.5 Secretary of board. The fire code official shall act as secretary of the board and shall keep chief appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all its proceedings, which shall set forth the reasons for its decisions the board’s decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>A101.8-A101.3.6 Conflict of interest. Members with a material A member with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>A101.3.3-A101.3.8 Removal from office-the board. Members-A member shall be removed from office the board prior to the end of their terms only for cause. Continued absence of any member cause. Any member with continued absence from regular meetings-meeting of the board shall, may be removed at the discretion of the applicable governing body, render any such member liable to immediate removal from office-chief appointing authority.</p> <p>A101.10-A101.4 Procedures-Rules and procedures. The board shall be operated in accordance with the Administrative Procedures Act of the state in which it is established or shall establish rules and regulations for its own procedure not inconsistent-establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. <u>The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</u></p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>A101.7A101.5 Meetings, Notice of meetings. The board shall meet at regular intervals, to be determined by the chairman. In any event, the board shall meet upon notice from the chairperson, within 10 days after notice of appeal has been received, the filing of an appeal or at stated periodic intervals.</p> <p>A101.4A101.5.2 Quorum. Three members of the board shall constitute a quorum. In varying the application of any provisions of this code or in modifying an order of the fire code official, affirmative votes of the majority present, but not less than three, shall be required.</p> <p>A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.</p> <p>Add new definition for A101.2 Application for appeal, A101.2.1 Limitation of authority, A102.2.2 Stays of enforcement, A101.3.1 Qualifications, A101.3.2 Alternate members, A101.3.4 Chairperson, A101.3.7 Compensation of members, A101.5.1 Open hearing, A101.5.3 Postponed hearing, A101.7 Board decision, A101.7.1 Resolution, A101.7.2 Administration and A101.8 Court review as follows:</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the fire code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the fire code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A102.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.1 Qualifications.</u> The board shall consist of members who are qualified by experience and training to pass on matters pertaining to hazards of fire, explosions, hazardous conditions or fire protection systems, and are not employees of the jurisdiction.</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.3.2 Alternate members.</u> The chief appointing authority is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p><u>A101.3.4 Chairperson.</u> The board shall annually select one of its members to serve as chairperson.</p> <p><u>A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p><u>A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant's representative, the fire code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.3 Postponed hearing.</u> When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.</p> <p><u>A101.7 Board decision.</u> The board shall only modify or reverse the decision of the fire code official by a concurring vote of three or more members.</p> <p><u>A101.7.1 Resolution.</u> The decision of the board shall be by resolution. Every decision shall be promptly filed in writing in the office of the fire code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant's representative and to the fire code official.</p> <p><u>A101.7.2 Administration.</u> The fire code official shall take immediate action in accordance with the decision of the board.</p> <p><u>A101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Delete existing definitions for A101.2 Membership, A101.2.1 Design professional, A101.2.2 Fire protection engineering professional, A101.2.3 Industrial safety professional, A101.2.4 General contractor, A101.2.5 General industry or business representative, A101.3.1 Initial appointments and A101.9 Decisions.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Add new definition for APPENDIX A as follows:</p> <p style="text-align: center;"><u>APPENDIX A</u> <u>BOARD OF APPEALS</u> <u>A101</u> <u>GENERAL</u></p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 109 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>[A] A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>shall be represented by <u>legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</u></p> <p>Change existing definitions for [A] 109.2 Membership of board, [A] 109.2.1 Qualifications, [A] 109.2.2 Alternate members, [A] 109.2.3 Chairman, [A] 109.2.5 Secretary, [A] 109.2.4 Disqualification of member, [A] 109.2.6 Compensation of members, [A] 109.4.1 Procedure, [A] 109.3 Notice of meeting, [A] 109.5 Postponed hearing, [A] 109.6 Board decision, [A] 109.6.1 Resolution, [A] 109.6.2 Administration and [A] 109.7 Court review to:</p> <p>[A] 109.2 <u>A101.3</u> Membership of board. The board of appeals shall consist of five <u>voting members</u> appointed by the chief appointing authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 <u>[INSERT NUMBER OF YEARS]</u> years or until a successor has been appointed. <u>The board member’s terms shall be staggered at intervals, so as to provide continuity.</u> The code official shall be an <u>ex officio</u> member of said board but shall not vote on any matter before the board.</p> <p>[A] 109.2.1 <u>A101.3.1</u> Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction,</u> one from each of the following professions or disciplines:</p> <ol style="list-style-type: none"> 1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years’ experience, 5 of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering or architectural experience. 3. Registered design professional with fuel gas and plumbing engineering experience; or a fuel gas contractor with not less than 10 years’ experience, 5 of which shall have been in responsible charge of work. 4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years’ experience, 5 of which shall have been in responsible charge of work. 5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years’ experience, 5 of which shall 					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>have been in responsible charge of work.</p> <p>[A] 109.2.2 A101.3.2 Alternate members. The chief appointing authority shall be authorized to appoint two alternate members who shall be called by the board chairman-chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years, the same term or until a successor has been appointed.</p> <p>[A] 109.2.3 A101.3.4 Chairman- Chairperson. The board shall annually select one of its members to serve as chairman-chairperson.</p> <p>[A] 109.2.5 A101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>[A] 109.2.4 A101.3.6 Disqualification-Conflict of member-interest. A member shall not hear an appeal in which that member has a with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>[A] 109.2.6 A101.3.7 Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 109.4.1 A101.4 Procedure- Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received, presented.</p> <p>[A] 109.3 A101.5 Notice of meeting. The board shall meet upon notice from the chairman-chairperson, within 10 days of the filing of an appeal, or at stated periodic meetings-intervals.</p> <p>[A] 109.5 A101.5.3 Postponed hearing. Where When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 109.6-A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three <u>or more</u> members.</p> <p>[A] 109.6.1-A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p> <p>[A] 109.6.2-A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 109.7-A101.8 Court review. Any person, whether or not a previous party to <u>of</u> the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Add new definition for APPENDIX A as follows:</p> <p>2018 International Mechanical Code</p> <p style="text-align: center;"><u>APPENDIX A</u> <u>BOARD OF APPEALS</u> <u>SECTION A101</u> <u>GENERAL</u></p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing <u>applications for modification of the requirements of this code pursuant to the provisions of Section 109 (Means of Appeals).</u> The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application <u>and intent of this code for the purpose of issuing orders pursuant to these provisions.</u></p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official <u>to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</u></p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code <u>or interpret the administration of this code.</u></p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>[A] A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>Change existing definitions for [A] 109.2 Membership of board, [A] 109.2.1 Qualifications, [A] 109.2.2 Alternate members, A101.3.3 Vacancies, [A] 109.2.3 Chairman, [A] 109.2.5 Secretary, [A] 109.2.4 Disqualification of member, [A] 109.2.6 Compensation of members, [A] 109.4.1 Procedure, [A] 109.3 Notice of meeting, [A] 109.5 Postponed hearing, [A] 109.6 Board decision, [A] 109.6.1 Resolution, [A] 109.6.2 Administration and [A] 109.7 Court review to:</p> <p><u>[A] 109.2 A101.3 Membership of board.</u> The board of appeals shall consist of five voting members appointed by the chief appointing authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years; and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</p> <p><u>[A] 109.2.1 A101.3.1 Qualifications.</u> The board of appeals shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 of which shall have been in responsible charge of work.</p> <p>2. Registered design professional with structural engineering or architectural experience.</p> <p>3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work.</p> <p>4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work.</p> <p>5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work.</p> <p>[A] 109.2.2 <u>A101.3.2</u> Alternate members. The chief appointing authority shall <u>is authorized to</u> appoint two alternate members who shall be called by the board chairman <u>chairperson</u> to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years, the same term <u>or until a successor has been appointed.</u></p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p>[A] 109.2.3 <u>A101.3.4</u> Chairman. Chairperson. The board shall annually select one of its members to serve as chairman <u>chairperson</u>.</p> <p>[A] 109.2.5 <u>A101.3.5</u> Secretary. The chief administrative officer <u>appointing authority</u> shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer. <u>which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</u></p> <p>[A] 109.2.4 <u>A101.3.6</u> Disqualification Conflict of member interest. A member shall not hear an appeal in which that member has a <u>with any</u> personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 109.2.6 <u>A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p>[A] 109.4.1 <u>A101.4 Procedure, Rules and procedures.</u> The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. <u>establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law.</u> The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received. presented.</p> <p>[A] 109.3 <u>A101.5 Notice of meeting.</u> The board shall meet upon notice from the chairman <u>chairperson</u>, within 10 days of the filing of an appeal, or at stated periodic meetings <u>intervals.</u></p> <p>[A] 109.5 <u>A101.5.3 Postponed hearing.</u> When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>[A] 109.6 <u>A101.7 Board decision.</u> The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three or more members.</p> <p>[A] 109.6.1 <u>A101.7.1 Resolution.</u> The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p> <p>[A] 109.6.2 <u>A101.7.2 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 109.7 <u>A101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Add new definition for APPENDIX A as follows: 2018 International Plumbing Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL <u>A101.1 Scope. A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section XXX (Means of Appeals). The board shall be</u></p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p>A101.2 Application for appeal. Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p>A101.2.1 Limitation of authority. The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>A101.2.2 Stays of enforcement. Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p>A101.3.3 Vacancies. Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p>A101.3.8 Removal from the board. A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p>A101.5.2 Quorum. Three members of the board shall constitute a quorum.</p> <p>A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.</p> <p>Change existing definitions for 109.2 Membership of board, 109.2.1 Qualifications, 109.2.2 Alternate members, 109.2.3 Chairman, 109.2.5 Secretary, A109.2.4 Disqualification of member, 109.2.6 Compensation of members, 109.4.1 Procedure, 109.3 Notice of meeting, 109.4 Open hearing, 109.5 Postponed hearing, 109.6 Board decision, 109.6.1 Resolution, 109.6.2 Administration and 109.7 Court review to:</p> <p>109.2-A101.3 Membership of board. The board of appeals shall consist of five voting members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>years, one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 <u>[INSERT NUMBER OF YEARS]</u> years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</p> <p>109.2.1 A101.3.1 Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</u> one from each of the following professions or disciplines:</p> <ol style="list-style-type: none"> 1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering or architectural experience. 3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. <p>109.2.2 A101.3.2 Alternate members. The chief appointing authority shall <u>is authorized to</u> appoint two alternate members who shall be called by the board chairman <u>chairperson</u> to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years <u>the same term</u> or until a successor has been appointed.</p> <p>109.2.3 A101.3.4 Chairman. Chairperson. The board shall annually select one of its members to serve as chairman <u>chairperson</u>.</p>					

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>109.2.5 A101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the board’s decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>109.2.4 A101.3.6 Disqualification Conflict of member interest. A member shall not hear an appeal in which that member has with any personal, professional or financial interest. interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>109.2.6 A101.3.7 Compensation of members. Compensation of members shall be determined by law.</p> <p>109.4.1 A101.4 Procedure. Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received. presented.</p> <p>109.3 A101.5 Notice of meeting. The board shall meet upon notice from the chairman chairperson, within 10 days of the filing of an appeal or at stated periodic meetings. intervals.</p> <p>109.4 A101.5.1 Open hearing. Hearings. All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>109.5 A101.5.3 Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>109.6 A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three <u>or more</u> members.</p> <p>109.6.1 A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p>					

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		Decrease	None	Increase		
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	<p><u>109.6.2-101.7.2 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p><u>109.7-101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Add new definition for APPENDIX A as follows: 2018 International Private Sewage Disposal Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 109 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p>					

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		Decrease	None	Increase		
Sub Code:						
	<p><u>[A] A101.5.1 Open hearing. All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</u></p> <p><u>A101.5.2 Quorum. Three members of the board shall constitute a quorum.</u></p> <p><u>A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</u></p> <p>Change existing definitions for [A] 109.2 Membership of board, [A] 109.2.1 Qualifications, [A] 109.2.2 Alternate members, [A] 109.2.3 Chairman, [A] 109.2.5 Secretary, [A] 109.2.4 Disqualification of a member, [A] 109.2.6 Compensation of members, [A] 109.4.1 Procedure, [A] 109.3 Notice of meeting, [A] 109.5 Postponed hearing, [A] 109.6 Board decision, [A] 109.6.1 Resolution, [A] 109.6.2 Administration and [A] 109.7 Court review to:</p> <p><u>[A] 109.2 A101.3 Membership of board. The board of appeals shall consist of five voting members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member’s terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</u></p> <p><u>[A] 109.2.1 A101.3.1 Qualifications. The board of appeals shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines:</u></p> <ol style="list-style-type: none"> <u>1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</u> <u>2. Registered design professional with structural engineering or architectural experience.</u> <u>3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing</u> 					

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		Decrease	None	Increase		
Sub Code:						
	<p>contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>[A] 109.2.2 A101.3.2 Alternate members. The chief appointing authority shall <u>is authorized to</u> appoint two alternate members who shall be called by the board chairman <u>chairperson</u> to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years <u>the same term</u> or until a successor has been appointed.</p> <p>[A] 109.2.3 A101.3.4 Chairman. Chairperson. The board shall annually select one of its members to serve as chairman <u>chairperson</u>.</p> <p>[A] 109.2.5 A101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer. <u>which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</u></p> <p>[A] 109.2.4 A101.3.6 Disqualification Conflict of a member. interest. A member shall not hear an appeal in which that member has with <u>any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</u></p> <p>[A] 109.2.6 A101.3.7 Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 109.4.1 A101.4 Procedure. Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. <u>establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law.</u> The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received <u>presented</u>.</p>					

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		Decrease	None	Increase		
Sub Code:						
	<p>[A] 109.3-A101.5 Notice of meeting. The board shall meet upon notice from the chairman-chairperson, within 10 days of the filing of an appeal or at stated periodic meetings-intervals.</p> <p>[A] 109.5-A101.5.3 Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>[A] 109.6-A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three <u>or more</u> members.</p> <p>[A] 109.6.1-A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p> <p>[A] 109.6.2-A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 109.7-A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Add new definition for APPENDIX A as follows: 2018 International Property Maintenance Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing <u>applications for modification of the requirements of this code pursuant to the provisions of Section 111 (Means of Appeals).</u> The board shall be established and operated in accordance with this section, <u>and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</u></p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to <u>appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an</u></p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</u></p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.3.1 Qualifications.</u> The board shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>[A] A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>Change existing definitions for [A] 111.8 Stays of enforcement, [A] 111.2 Membership of board, [A] 111.2.1 Alternate members, [A] 111.2.2 Chairman, [A] 111.2.4 Secretary, [A] 111.2.3 Disqualification of member, [A] 111.2.5 Compensation of members, [A] 111.4.1 Procedure, [A] 111.3 Notice of meeting, [A] 111.5 Postponed hearing, [A] 111.6 Board decision, [A] 111.6.1 Records and copies, [A] 111.6.2 Administration and [A] 111.7 Court review to:</p> <p><u>[A] 111.8 A101.2.2 Stays of enforcement.</u> Appeals of notice and orders to other, other than Imminent Danger notices notices, shall stay the enforcement of the notice and order until the appeal is heard by the appeals board.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 111.2.1 <u>101.3</u> Membership of board. The board of appeals shall consist of not less than three members who are qualified by experience and training to pass on matters pertaining to property maintenance and who are not employees of the jurisdiction. The five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex-officio <u>ex officio</u> member of said board but shall not vote on any matter before the board. The board shall be appointed by the chief appointing authority, and shall serve staggered and overlapping terms.</p> <p>[A] 111.2.1 <u>101.3.2</u> Alternate members. The chief appointing authority shall appoint not less than <u>is</u> authorized to appoint two alternate members who shall be called by the board chairman <u>chairperson</u> to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p>[A] 111.2.2 <u>101.3.4</u> Chairman-Chairperson. The board shall annually select one of its members to serve as chairman <u>chairperson</u>.</p> <p>[A] 111.2.4 <u>101.3.5</u> Secretary. The chief administrative officer appointing authority shall designate a qualified person <u>clerk</u> to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>[A] 111.2.3 <u>101.3.6</u> Disqualification-Conflict of member interest. A member shall not hear an appeal in which that member has a <u>with any</u> personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>[A] 111.2.5 <u>101.3.7</u> Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 111.4.1 <u>101.4</u> Procedure-Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted <u>establish policies and</u> procedures necessary to carry out its duties consistent with the provisions of this code and applicable</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>state law.</u> The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received. <u>presented.</u></p> <p>[A] 111.3 A101.5 Notice of meeting. The board shall meet upon notice from the chairman <u>chairperson</u>, within 20-10 days of the filing of an appeal, or at stated periodic meetings. <u>intervals.</u></p> <p>[A] 111.5 A101.5.3 Postponed hearing. When the full board is <u>five members are</u> not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>[A] 111.6 A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official only by a concurring vote of a majority of the total number of appointed board three <u>or more</u> members.</p> <p>[A] 111.6.1 A101.7.1 Records and copies. Resolution. The decision of the board shall be recorded. <u>Copies shall be by resolution.</u> Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant <u>or the appellant's representative</u> and to the code official.</p> <p>[A] 111.6.2 A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 111.7 A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Add new definition for APPENDIX A as follows: 2018 International Swimming Pool and Spa Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 108 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.</p> <p>Change existing definitions for [A] 108.2 Membership of board, [A] 108.2.1 Qualifications, [A] 108.2.2 Alternate members, [A] 108.2.3 Chairman, [A] 108.2.5 Secretary, [A] 108.2.4 Disqualification of member, [A] 108.2.6 Compensation of members, [A] 108.4.1 Procedure, [A] 108.3 Notice of meeting, [A] 108.4 Open hearing, [A] 108.5 Postponed hearing, [A] 108.6 Board decision, [A] 108.6.1 Resolution, [A] 108.6.2 Administration and [A] 108.7 Court review to:</p> <p><u>[A] 108.2 A101.3 Membership of board.</u> The board of appeals shall consist of five voting members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 [INSERT NUMBER OF YEARS] years or until a successor has been</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>appointed. <u>The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</u></p> <p>[A] 108.2.1 <u>A101.3.1</u> Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines:</u></p> <ol style="list-style-type: none"> 1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering or architectural experience. 3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 5. Registered design professional with pool or spa experience; or a contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. <p>[A] 108.2.2 <u>A101.3.2</u> Alternate members. The chief appointing authority shall is authorized to appoint two alternate members who shall be called by the board chairman <u>chairperson</u> to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years <u>the same term</u> or until a successor has been appointed.</p> <p>[A] 108.2.3 <u>A101.3.4</u> Chairman. <u>Chairperson.</u> The board shall annually select one of its members to serve as chairman. <u>chairperson.</u></p> <p>[A] 108.2.5 <u>A101.3.5</u> Secretary. The chief administrative officer <u>appointing authority</u> shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of <u>all</u> proceedings in the office of the chief administrative officer.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>which shall set forth the reasons for the <u>board’s decision, the vote of each member, the absence of a member and any failure of a member to vote.</u></p> <p>[A] 108.2.4 A101.3.6 Disqualification Conflict of member interest. A member shall not hear an appeal <u>in which that member has with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</u></p> <p>[A] 108.2.6 A101.3.7 Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 108.4.1 A101.4 Procedure. Rules and procedures. The board shall adopt and make available to the public through the <u>secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law.</u> The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be <u>received. presented.</u></p> <p>[A] 108.3 A101.5 Notice of meeting. The board shall meet upon notice from the <u>chairman-chairperson,</u> within 10 days of the filing of an appeal or at stated periodic <u>meetings. intervals.</u></p> <p>[A] 108.4 A101.5.1 Open hearing. Hearings <u>All hearings</u> before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>[A] 108.5 A101.5.3 Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>[A] 108.6 A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three <u>or more</u> members.</p> <p>[A] 108.6.1 A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p> <p>[A] 108.6.2 A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 108.7 A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>Change existing definition for SECTION 106 to: 2018 International Wildland-Urban Interface Code SECTION 106 APPEALS</p> <p>[A] 106.1 General. To determine the suitability of alternative materials and methods and to provide for reasonable interpretations of the provisions of this code, there shall be and hereby is created a board of appeals consisting of five members who are qualified by experience and training to pass judgment on pertinent matters. The code official, <i>building official</i> and fire chief shall be ex officio members, and the code official shall act as secretary of the board. The board of appeals shall be appointed by the legislative body and shall hold office at their discretion. The board shall adopt reasonable rules and regulations for conducting its investigations and shall render decisions and findings in writing to the code official, with a duplicate copy to the applicant.</p> <p>Add new definition for APPENDIX A as follows: APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 106 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the building official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3 Membership of board.</u> The board shall consist of five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</p> <p><u>A101.3.1 Qualifications.</u> The board shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p> <p><u>A101.3.2 Alternate members.</u> The chief appointing authority is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.4 Chairperson.</u> The board shall annually select one of its members to serve as chairperson.</p> <p><u>A101.3.5 Secretary.</u> The chief appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p><u>A101.3.6 Conflict of interest.</u> A member with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p><u>A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>board may be removed at the discretion of the chief appointing authority.</p> <p>A101.4 Rules and procedures. The board shall establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</p> <p>A101.5 Notice of meeting. The board shall meet upon notice from the chairperson, within 10 days of the filing of an appeal or at stated periodic intervals.</p> <p>A101.5.1 Open hearing. All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>A101.5.2 Quorum. Three members of the board shall constitute a quorum.</p> <p>A101.5.3 Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>A101.7 Board decision. The board shall only modify or reverse the decision of the code official by a concurring vote of three or more members.</p> <p>A101.7.1 Resolution. The decision of the board shall be by resolution. Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</p> <p>A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p>					

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		Decrease	None	Increase		
Sub Code:						
E15-18 Part II	<p>Add new definition for 1105.10 [BE] Means of egress as follows:</p> <p>2018 International Mechanical Code <u>1105.10 [BE] Means of egress.</u> Machinery rooms larger than 1,000 square feet (93 m2) shall have not less than two exits or exit access doorways. Where two exit access doorways are required, one such doorway is permitted to be served by a fixed ladder or an alternating tread device. Exit access doorways shall be separated by a horizontal distance equal to one-half the maximum horizontal dimension of the room. All portions of machinery rooms shall be within 150 feet (45 720 mm) of an exit or exit access doorway. An increase in exit access travel distance is permitted in accordance with Section 1017.1. Exit and exit access doorways shall swing in the direction of egress travel and shall be equipped with panic hardware, regardless of the occupant load served. Exit and exit access doorways shall be tight fitting and self-closing.</p>			X	\$2.00 per room sqft.	Necessary addition for clarification
E86-18	<p>Change existing definition for 1015.7 Roof access to:</p> <p>2018 International Building Code 1015.7 Roof access. Guards shall be provided where the roof hatch opening is located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof or grade below. The guard shall extend not less than 30 inches (762mm) beyond each end of the hatch parallel to the roof edge. The guard shall be constructed so as to prevent the passage of a sphere 21 inches (533 mm) in diameter. Exception: Guards are not required where personal fall arrest anchorage connector devices that comply with ANSI/ASSE Z 359.1 are installed.</p>			X	Minimal	Clarification
E92-18	<p>Change existing definition for Air movement in corridors to:</p> <p>2018 International Building Code Air movement in corridors. Corridors shall not serve as supply, return, exhaust, relief or ventilation air ducts. Exceptions:</p> <ol style="list-style-type: none"> 1. Use of a corridor as a source of makeup air for exhaust systems in rooms that open directly onto such corridors, including toilet rooms, bathrooms, dressing rooms, smoking lounges and janitor closets, shall be permitted, provided that each such corridor is directly supplied with outdoor air at a rate greater than the rate of makeup air taken from the corridor. 2. Where located within a dwelling unit, the use of corridors for conveying return air shall not be prohibited. 3. Where located within tenant spaces of 1,000 		X			Clarification

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CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>square feet (93 m²) or less in area, utilization of corridors for conveying return air is permitted.</p> <p>4. Transfer air movement required to maintain pressurization difference within health care facilities in accordance with Section 407.1 of the International Mechanical Code. <u>ASHRAE 170.</u></p>					
FS62-18	<p>Change existing definition for [BF] CEILING RADIATION DAMPER: 2018 International Building Code 717.3.1 Damper testing.</p> <ol style="list-style-type: none"> 1. Dampers shall be listed and labeled in accordance with the standards in this section. 2. Fire dampers shall comply with the requirements of UL 555. 3. Smoke dampers shall comply with the requirements of UL 555S. 4. Combination fire/smoke dampers shall comply with the requirements of both UL 555 and UL 555S. 5. Ceiling radiation dampers shall comply with the requirements of UL 555C or shall be tested as part of a fire-resistance-rated floor/ceiling or roof/ceiling assembly in accordance with ASTM E119 or UL 263. Only ceiling radiation dampers labeled for use in dynamic systems shall be installed in heating, ventilation and air conditioning systems designed to operate with fans on during a fire. 6. Corridor dampers shall comply with requirements of both UL 555 and UL 555S. Corridor dampers shall demonstrate acceptable closure performance when subjected to 150 feet per minute (0.76 mps) velocity across the face of the damper during the UL 555 fire exposure test. 		X			Clarification
FS64-18	<p>Change existing definition for 717.3.1 Damper testing to: 2018 International Building Code 717.6.2.1.2 Static systems. Static <u>ceiling radiation</u> dampers shall be provided with systems which are not designed to operate during a fire.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where a static ceiling radiation damper is installed at the opening of a duct, a smoke detector shall be installed inside the duct or outside the duct with sampling tubes protruding into the duct. The detector or tubes within the duct shall be within 5 feet (1524 mm) of the damper. Air outlets and inlets shall not be located between the detector or tubes and the damper. The detector shall be listed for the air velocity, temperature and humidity anticipated at the point where it is installed. Other than 			X	Minimal	Clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>in mechanical smoke control systems, dampers shall be closed upon fan shutdown where local smoke detectors require a minimum velocity to operate.</p> <p>2. Where a static ceiling radiation damper is installed in a ceiling, the <u>ceiling radiation</u> damper shall be permitted to be controlled by a smoke detection system installed within the same room <u>or area</u> as the ceiling radiation damper.</p> <p>3. Where a static ceiling radiation damper is installed in an area served by the duct in which the damper will be located, the ceiling radiation damper shall be permitted to be controlled by the smoke detection system.</p> <p><u>34. Where a ceiling radiation damper is installed within a room and an occupant sensor is provided within the room served by the damper, a static ceiling radiation damper shall be permitted to be installed within a room where an occupant sensor is provided within the room that will shut down the down the system.</u></p>					
FS65-18	<p>Change existing definition for 717.3.3.1 Fire damper actuation device to:</p> <p>2018 International Building Code 717.3.3.1 Fire damper actuation device actuation. The fire damper actuation device Primary heat <u>responsive devices used to actuate fire dampers</u> shall meet one of the following requirements:</p> <ol style="list-style-type: none"> 1. The operating temperature shall be approximately 50°F (10°C) above the normal temperature within the duct system, but not less than 160°F (71°C). 2. The operating temperature shall be not more than 350°F (177°C) where located in a smoke control system complying with Section 909. 		X			Clarification
FS67-18	<p>Change existing definition for 717.5.2 Fire barriers to:</p> <p>2018 International Building Code 717.5.2 Fire barriers. Ducts and air transfer openings of fire barriers shall be protected with listed fire dampers installed in accordance with their listing. Ducts and air transfer openings shall not penetrate enclosures for interior exit stairways and ramps and exit passageways, except as permitted by Sections and 1024.6, respectively.</p> <p>Exception: Fire dampers are not required at penetrations of fire barriers where any of the following apply:</p> <ol style="list-style-type: none"> 1. Penetrations are tested in accordance with ASTM E119 or UL 263 as part of the fire- resistance-rated assembly. 	X			Minimal	Clarification

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2. Ducts are used as part of an approved smoke control system in accordance with Section 909 and where the use of a fire damper would interfere with the operation of a smoke control system.</p> <p>3. Such walls are penetrated by <u>fully</u> ducted HVAC systems, have a required fire-resistance rating of 1 hour or less, are in areas of other than Group H and are in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2. For the purposes of this exception, a <u>fully</u> ducted HVAC system shall be a duct system for conveying supply, return or exhaust air as part of the structure's HVAC system. Such a duct system shall be constructed of sheet steel not less than No. 26 gage thickness and shall be continuous from the air-handling appliance or equipment to the air outlet and inlet terminals. <u>Flexible air connectors shall be permitted in the following locations:</u></p> <p><u>3.1. Non-metal flex connections shall be permitted at the duct connection to the air handling unit or equipment located within the mechanical room in accordance with Section 603.9 of the International Mechanical Code.</u></p> <p><u>3.1. Non-metal flex connections shall be permitted from an overhead metal duct to a ceiling diffuser within the same room in accordance with Section 603.6.2 of the International Mechanical Code.</u></p>					
FS70-18	<p>Change existing definition for 717.5.3 Shaft enclosures to: 2018 International Building Code 717.5.3 Shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with listed fire and smoke dampers installed in accordance with their listing.</p> <p>Exceptions:</p> <p>1. Fire dampers are not required at penetrations of shafts where any of the following criteria are met:</p> <p>1.1. Steel exhaust subducts <u>having a wall thickness of not less than 0.0187 inch (0.4712 mm) are extended not less than 22 inches (559 mm) vertically in exhaust shafts, provided that there is a continuous airflow upward to the outside, and an exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with Section 909.11, so as to maintain a continuous upward airflow to the outdoors.</u></p>		X			Clarification

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1.2. Penetrations are tested in accordance with ASTM E119 or UL 263 as part of the fire- resistance-rated assembly.</p> <p>1.3. Ducts are used as part of an approved smoke control system designed and installed in accordance with Section 909 and where the fire damper will interfere with the operation of the smoke control system.</p> <p>1.4. The penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than 2-hour fire-resistance-rated construction.</p> <p>2. In Group B and R occupancies equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, smoke dampers are not required at penetrations of shafts where all of the following criteria are met:</p> <p>2.1. Kitchen, clothes dryer, bathroom and toilet room exhaust openings are installed with steel exhaust subducts, having a minimum wall thickness of <u>not less than 0.0187-inch (0.4712 mm) (No. 26 gage)</u>.</p> <p>2.2. The subducts extend not less than 22 inches (559 mm) vertically.</p> <p>2.3. An exhaust fan is installed at the upper terminus of the shaft that is powered continuously in accordance with the provisions of Section 909.11, so as to maintain a continuous upward airflow to the outside. <u>outdoors.</u></p> <p>3. Smoke dampers are not required at penetration of exhaust or supply shafts in parking garages that are separated from other building shafts by not less than 2-hour fire-resistance- rated construction.</p> <p>4. Smoke dampers are not required at penetrations of shafts where ducts are used as part of an approved mechanical smoke control system designed in accordance with Section 909 and where the smoke damper will interfere with the operation of the smoke control system.</p> <p>5. Fire dampers and combination fire/smoke dampers are not required in kitchen and clothes dryer exhaust systems where dampers are prohibited by the International Mechanical Code.</p> <p>Add new definition for 717.5.3.1 Continuous upward airflow as follows:</p>					

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Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<u>717.5.3.1 Continuous upward airflow.</u> Fire dampers and smoke dampers shall not be installed in shafts that are required to maintain a continuous upward airflow path where closure of the damper would result in the loss of the airflow.					
F83-18 Part II	<p>Change existing definition for Flammable refrigerants, Special requirements for Group A2L refrigerant machinery rooms and [M] 605.17 Special requirements for Group A2L refrigerant machinery rooms to:</p> <p>2018 International Mechanical Code Flammable refrigerants. Where refrigerants of Groups A2, A3, B2 and B3 are used, the machinery room shall conform to the Class 1, Division 2, hazardous location classification requirements of NFPA 70.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Ammonia machinery rooms that are provided with ventilation in accordance with Section 1106.3. 2. Machinery rooms for systems containing Group A2L refrigerants that are provided with ventilation in accordance with Section 1106.5. <p>Special requirements for Group A2L refrigerant machinery rooms. Machinery rooms for with systems containing Group A2L refrigerants shall comply with Sections 1106.5.1 through 1106.5.3.</p> <p>Exception: Machinery rooms conforming to the that do not conform with the Class I, Division 2, hazardous location classification electrical requirements of NFPA 70 are not required to, as permitted by Section 1106.4 Exception 2, shall comply with Sections 1106.5.1 and 1106.5.2 through 1106.5.3.</p> <p>2018 International Fire Code [M] 605.17 Special requirements for Group A2L refrigerant machinery rooms. Machinery rooms with systems containing Group A2L refrigerants shall comply with Sections 605.17.1 through 605.17.3.</p> <p>Exception: Machinery rooms conforming to the Class 1 that do not conform with the Class I, Division 2 hazardous location classification electrical requirements of NFPA 70, as permitted by Section 605.16 Exception 2, shall comply with Sections 605.17.1 through 605.17.3.</p>		X			Clarification
F276-18	Change existing definition for [F]307.1.1 Uses other than Group H, 311.2 Moderate-hazard storage, Group S-1, 311.3 Low-hazard storage, Group S-2, Scope, Nonapplicability and [F]502.9.5 Flammable and combustible liquids to:		X			Clarification

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>2018 International Fire Code</p> <p>[F]307.1.1 Uses other than Group H. An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.</p> <ol style="list-style-type: none"> 1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416 and the International Fire Code. 2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to the International Fire Code. 3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment. 4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment <i>listed by an approved testing agency</i>, provided that this occupancy is separated from all other areas of the building by 1-hour <i>fire barriers</i> constructed in accordance with Section 707 or 1-hour <i>horizontal assemblies</i> constructed in accordance with Section 711, or both. 5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C). 6. Liquor stores and distributors without bulk storage. 7. Refrigeration systems. 8. The storage or utilization of materials for agricultural purposes on the premises. 9. Stationary storage battery systems installed in accordance with the International Fire Code. 10. Corrosive personal or household products in their original packaging used in retail display. 11. Commonly used corrosive building materials. 12. Buildings and structures occupied for aerosol product storage shall be classified as Group S- 1, provided that such buildings conform to the requirements of the International Fire Code. 13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid hazardous materials in quantities not exceeding the maximum allowable quantity per <i>control area</i> in Group M or S occupancies complying with Section 414.2.5. 14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special 					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the International Fire Code.</p> <p>15. Stationary fuel cell power systems installed in accordance with the International Fire Code.</p> <p>16. Capacitor energy storage systems in accordance with the International Fire Code.</p> <p>17. Group B higher education laboratory occupancies complying with Section 428 and Chapter 38 of the International Fire Code</p> <p>18. <u>Distilling or brewing of beverages conforming to the requirements of the International Fire Code.</u></p> <p>19. <u>The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the International Fire Code.</u></p> <p>311.2 Moderate-hazard storage, Group S-1. Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:</p> <ul style="list-style-type: none"> Aerosol products, Levels 2 and 3 Aircraft hangar (storage and repair) Bags: cloth, burlap and paper Bamboos and rattan Baskets Belting: canvas and leather <u>Beverages: over 16-percent alcohol content</u> Books and paper in rolls or packs Boots and shoes Buttons, including cloth covered, pearl or bone Cardboard and cardboard boxes Clothing, woolen wearing apparel Cordage Dry boat storage (indoor) Furniture Furs Glues, mucilage, pastes and size Grains Horns and combs, other than celluloid Leather Linoleum Lumber Motor vehicle repair garages complying with the maximum allowable quantities of hazardous materials listed in Table 307.1(1) (see Section 406.8) 					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Photo engravings Resilient flooring Self-service storage facility (mini-storage) Silks Soaps Sugar Tires, bulk storage of Tobacco, cigars, cigarettes and snuff Upholstery and mattresses Wax candles</p> <p>311.3 Low-hazard storage, Group S-2. Storage Group S-2 occupancies include, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products are permitted to have a negligible amount of plastic <i>trim</i>, such as knobs, handles or film wrapping. Group S-2 storage uses shall include, but not be limited to, storage of the following:</p> <ul style="list-style-type: none"> Asbestos Beverages up to and including 16-percent alcohol in metal, glass or ceramic containers Cement in bags Chalk and crayons Dairy products in nonwaxed coated paper containers Dry cell batteries Electrical coils Electrical motors Empty cans Food products Foods in noncombustible containers Fresh fruits and vegetables in nonplastic trays or containers Frozen foods Glass Glass bottles, empty or filled with noncombustible liquids Gypsum board Inert pigments Ivory Meats Metal cabinets Metal desks with plastic tops and <i>trim</i> Metal parts Metals Mirrors Oil-filled and other types of distribution transformers 					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	Parking garages, open or enclosed Porcelain and pottery Stoves Talc and soapstones Washers and dryers Scope. Prevention, control and mitigation of dangerous conditions related to storage, dispensing, use and handling of hazardous materials shall be in accordance with this chapter. This chapter shall apply to all hazardous materials, including those materials regulated elsewhere in this code, except that where specific requirements are provided in other chapters, those specific requirements shall apply in accordance with the applicable chapter. Where a material has multiple hazards, all hazards shall be addressed. Exceptions: <ol style="list-style-type: none"> 1. In retail or wholesale sales occupancies, the quantities of medicines, foodstuff or consumer products and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L). 2. Quantities of alcoholic beverages in retail or wholesale sales occupancies shall not be limited providing the liquids are packaged in individual containers not exceeding 1.3 gallons (5 L). 3. Application and release of pesticide and agricultural products and materials intended for use in weed abatement, erosion control, soil amendment or similar applications where applied in accordance with the manufacturers' instructions and label directions. 4. The off-site transportation of hazardous materials where in accordance with Department of Transportation (DOTn) regulations. 5. Building materials not otherwise regulated by this code. 6. Refrigeration systems (see Section 605). 7. Stationary storage battery systems regulated by Section 1206.2. 8. The display, storage, sale or use of fireworks and <i>explosives</i> in accordance with Chapter 56. 9. <i>Corrosives</i> utilized in personal and household products in the manufacturers' original consumer packaging in Group M occupancies. 10. The storage of <u>beer</u>, distilled spirits and wines in wooden 					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>barrels and casks.</p> <p>11. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids where in accordance with Section 5705.5.</p> <p>Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:</p> <ol style="list-style-type: none"> 1. Specific provisions for flammable liquids in motor fuel-dispensing facilities, repair garages, airports and marinas in Chapter 23. 2. Medicines, foodstuffs, cosmetics and commercial or institutional products containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solution not being flammable, provided that such materials are packaged in individual containers not exceeding 1.3 gallons (5 L). 3. Quantities of alcoholic beverages in retail or wholesale sales or storage occupancies, provided that the liquids are packaged in individual containers not exceeding 1.3 gallons (5 L). 4. Storage and use of fuel oil in tanks and containers connected to oil-burning equipment. Such storage and use shall be in accordance with Section 603. For abandonment of fuel oil tanks, this chapter applies. 5. Refrigerant liquids and oils in refrigeration systems (see Section 605). 6. Storage and display of aerosol products complying with Chapter 51. 7. Storage and use of liquids that do not have a fire point when tested in accordance with ASTM D92. 8. Liquids with a <i>flash point</i> greater than 95°F (35°C) in a water-miscible solution or dispersion with a water and inert (noncombustible) solids content of more than 80 percent by weight, which do not sustain combustion. 9. Liquids without <i>flash points</i> that can be flammable under some conditions, such as certain halogenated hydrocarbons and mixtures containing halogenated hydrocarbons. 10. The storage of <u>beer</u>, distilled spirits and wines in wooden barrels and casks. 11. Commercial cooking oil storage tank systems located within a building and designed and installed in accordance with Section 608 and NFPA 30. 					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Add new definition for 903.2.4.2 Group F-1 Distilled Spirits, 903.2.9.3 Group S-1 Distilled spirits or wine and CHAPTER 40 as follows:</p> <p>2018 International Fire Code 903.2.4.2 Group F-1 Distilled Spirits. An automatic sprinkler system shall be provided throughout a <u>Group F-1 fire area used for the manufacture of distilled spirits.</u></p> <p>903.2.9.3 Group S-1 Distilled spirits or wine. An automatic sprinkler system shall be provided throughout a <u>Group S-1 fire area used for the bulk storage of distilled spirits or wine.</u></p> <p style="text-align: center;"><u>CHAPTER 40</u> <u>STORAGE OF DISTILLED SPIRITS AND WINES</u> <u>SECTION 4001</u> <u>GENERAL</u> 4001.1 General. The storage of distilled spirits and wines in barrels and casks shall comply with this chapter in addition to other applicable requirements of this code. 4001.1.1 Nonapplicability. Chapter 50 and Chapter 57 of this code are not applicable to the storage of <u>distilled spirits and wines in barrels and casks as identified in Section 5001.1, Exception 10, and Section 5701.2, Item 10.</u></p> <p style="text-align: center;"><u>SECTION 4002</u> <u>DEFINITIONS</u> 4002.1 Terms defined in Chapter 2. Words and terms used in this chapter and defined in Chapter 2 shall have the meanings ascribed to them as defined therein.</p> <p style="text-align: center;"><u>SECTION 4003</u> <u>PRECAUTIONS AGAINST FIRE</u> Spill Control. Drainage or containment systems shall be provided by means of curbs, scuppers, <u>special drains, or other suitable means to prevent the flow of spills throughout the building.</u> Ventilation. Ventilation shall be provided for rooms and spaces <u>where distilled spirits and wines in barrels and casks are stored in accordance with the International Mechanical Code and one of the following:</u></p> <ol style="list-style-type: none"> 1. <u>The rooms and spaces shall be ventilated at a rate sufficient to maintain the concentration of vapors within the area at or below 25% of the LFL . This shall be confirmed by sampling of the actual vapor concentration under normal operating conditions. The sampling shall be conducted throughout the enclosed storage area extending to or toward the bottom and the top of the enclosed storage</u> 					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>area. The vapor concentration used to determine the required ventilation rate shall be the highest measured concentration during the sampling procedure. The sampling shall be conducted manually or by installation of a continuously monitoring flammable vapor detection system.</p> <p>2. The rooms and spaces shall be provided exhaust ventilation at a rate of not less than 1 cfm/ft² (0.3 m³/min) of solid floor area. The exhaust ventilation shall be accomplished by natural or mechanical means, with discharge of the exhaust to a safe location outside the building.</p> <p>Sources of ignition. Sources of ignition shall be controlled in accordance with Sections 4003.3.1 through 4003.4.</p> <p>Smoking. Smoking shall be prohibited and "No Smoking" signs provided as follows:</p> <ol style="list-style-type: none"> 1. In rooms or areas where hazardous materials are stored or dispensed or used in open systems in amounts requiring a permit in accordance with Section 105.6 and 105.7 2. Within 25 feet (7620mm) of outdoor storage, dispensing or open use areas. 3. Facility or areas within facilities that have been designated as totally "no smoking" shall have "No Smoking" signs placed at all entrances to the facility or area. Designated areas within such facilities where smoking is permitted either permanently or temporarily shall be identified with signs designating that smoking is permitted in these areas only. 4. In rooms or areas where flammable or combustible hazardous materials are stored, dispensed or used. <p>Signs required by this section shall be in English as a primary language or in symbols allowed by this code and shall comply with Section 310.</p> <p>Open Flame. Open flames and high-temperature devices shall not be used in a manner that creates a hazardous condition and shall be listed for use with the hazardous materials stored or used.</p> <p>Industrial trucks. Powered industrial trucks used in areas designated as hazardous (classified) locations in accordance with NFPA 70 shall be listed and labeled for use in the environment intended in accordance with NFPA 505.</p> <p>Electrical. Electrical wiring and equipment shall be installed and maintained in accordance with Section 605 and NFPA 70.</p> <p>4003.4 Lightning. Structures containing barrel storage should be protected from lightning. The lightning protection equipment shall be installed in accordance with NFPA 780 and NFPA 70.</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p style="text-align: center;">SECTION 4004 STORAGE</p> <p>Storage. Storage shall be in accordance with this section and Section 315.</p> <p>Empty containers. The storage of empty containers previously used for the storage of flammable or combustible liquids, unless free from explosive vapors, shall be stored as required for filled containers.</p> <p>Basement storage. Class I liquids shall be allowed to be stored in basements in amounts not exceeding the maximum allowable quantity over control area for use-open systems in Table 5003.1.1(1), provided that automatic suppression and other fire protection are provided in accordance with Chapter 9. Class II and IIIA liquids shall also be allowed to be stored in basements, provided that automatic suppression and other fire protection are provided in accordance with Chapter 9.</p> <p>Bulk beverage storage areas. There shall be no storage of combustible materials in the bulk beverage storage areas not related to the beverage storage activities.</p> <p style="text-align: center;">SECTION 4005 FIRE PROTECTION</p> <p>Automatic sprinkler system. The storage of distilled spirits and wines shall be protected by an approved automatic sprinkler system as required by Chapter 9.</p> <p>Portable Fire Extinguishers. Approved portable fire extinguishers shall be provided in accordance with Section 906.</p> <p style="text-align: center;">SECTION 4006 SIGNAGE</p> <p>4006.1 Hazard identification signs. Unless otherwise exempted by the fire code official, visible hazard identification signs as specified in NFPA 704 for the specific material contained shall be placed on stationary containers and above ground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the fire code official.</p> <p>4006.1.1 Maintenance and style. Signs and markings required by Section 4006.1 shall not be obscured or removed, shall be in English as a primary language or in symbols allowed by this code, shall be durable, and the size, color, and lettering shall be approved.</p> <p>Change existing definition for [F]502.9.5 Flammable and combustible liquids to:</p> <p>2018 International Mechanical Code</p>					

Table 4. 2021 IMC Changes Cost Impact

CODE CHANGE #	2021 IMC CHANGE SUMMARY	IMC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[F]502.9.5 Flammable and combustible liquids. Exhaust ventilation systems shall be provided as required by Sections 502.9.5.1 through 502.9.5.5 for the storage, use, dispensing, mixing and handling of flammable and combustible liquids. Unless otherwise specified, this section shall apply to any quantity of flammable and combustible liquids.</p> <p>Exception<u>Exceptions:</u></p> <ol style="list-style-type: none"> <u>1.</u> This section shall not apply to flammable and combustible liquids that are exempt from the International Fire Code. <u>2.</u> <u>The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the International Fire Code.</u> 					

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APPENDIX E

Table 5. 2021 IPC Changes Cost Impact						
CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
P1-18 Part I	Add new definition for: COPPER ALLOY. A metal alloy where the principle component homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.		X			Necessary addition for clarification
P1-18 Part IV	Add new definition for COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.		X			Necessary addition for clarification
P1-18 Part V	Add new definition for COPPER ALLOY as follows: COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.		X			Necessary addition for clarification
P2-18	Change definition for PUBLIC OR PUBLIC UTILIZATION and PRIVATE to: PUBLIC OR PUBLIC UTILIZATION. In the classification of plumbing fixtures, "public" applies to fixtures in general toilet rooms of schools, gymnasiums, hotels, airports, bus and railroad stations, public buildings, bars, public comfort stations, office buildings, stadiums, stores, restaurants and other installations where a number of fixtures are installed so that their utilization is similarly unrestricted with unrestricted exposure to walk-in traffic. PRIVATE. In the classification of plumbing fixtures, "private" applies to fixtures in residences and apartments, and to fixtures in nonpublic toilet rooms of hotels and motels and similar installations in buildings where the plumbing fixtures are intended for utilization by a family or an individual that are not public.	X			Minimal	Clarification
P3-18	Change existing definition for WATER DISPENSER to: WATER DISPENSER. A plumbing fixture that is manually controlled by the user for the purpose of dispensing potable drinking water into a receptacle such as a cup, glass or bottle. Such fixture is connected to the potable water distribution system of the premises. This definition includes a freestanding apparatus for the same purpose that is not connected to the potable water distribution system and that is supplied with potable water from a container, bottle or reservoir.		X			Clarification
P5-18	308.2 Piping seismic supports. Where earthquake loads are applicable in accordance with the International Building Code, plumbing piping supports, anchorage, and bracing shall be designed and installed for seismic forces in accordance with Chapter 16 of the International Building Code.		X			Clarification

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
P9-18	<p>Change existing definition for 308.9 Parallel water distribution systems to:</p> <p>308.9 Parallel water distribution systems. Piping bundles for manifold systems shall be supported in accordance with Table Support at changes in direction shall be in accordance with the manufacturer's instructions. Where hot water piping is bundled with cold or hot water piping, hot water piping shall be insulated in accordance with Section 607.5.</p>		X			Clarification
P11-18 Part II	<p>P2503.5.1 Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water or, <u>air</u> for piping systems other than plastic <u>or, by a vacuum of air for plastic piping systems,</u> without evidence of leakage. EitherThe test shall be applied to the drainage system in its entirety or in sections after rough-in piping has been installed, as follows:</p> <ol style="list-style-type: none"> 1. Water test. Each section shall be filled with water to a point not less than 5 feet (1524 mm) above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection. 2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes. 3. <u>Vacuum Test. The portion under test shall be evacuated of air by a vacuum type pump to achieve a uniform gauge pressure of -5 pounds per square inch or a negative 10-inches of mercury column (-34 kPa). This pressure shall be held without the removal of additional air for a period of 15 minutes.</u> 	X			Minimal	Clarification
P12-18	<p>312.10.2 Testing. Reduced pressure principle, double check, pressure vacuum breaker, reduced pressure detector fire protection, double check detector fire protection, and spill-resistant vacuum breaker backflow preventer assemblies and hose connection backflow preventers shall be tested at the time of installation, immediately after repairs or relocation and at least annually. The testing procedure shall be performed in accordance with one of the following standards: ASSE 5013, ASSE 5015, ASSE 5020, ASSE 5047, ASSE 5048, ASSE 5052, ASSE 5056, CSA B64.10 or CSA B64.10.1. <u>Test gauges shall comply with ASSE 1064.</u></p>		X			Increased test gauge accuracy
P14-18	<p>403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or</p>		X			Clarification.

DRAFT

Table 5. 2021 IPC Changes Cost Impact						
CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table 403.1. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number.</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> <u>1.</u> The total occupant load shall not be required to be divided in half where approved statistical data indicates a distribution of the sexes of other than 50 percent of each sex. <u>2.</u> <u>Where multi-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100%, based on total occupant load. In such multi-user user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall.</u> 					
P15-18	<p>Change existing definition for 403.2 Separate facilities to:</p> <p>6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets are installed in accordance with Section 405.3.4. <u>Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.</u></p>	X			Minimal	Clarification
P16-18	<p>Change existing definition for 403.1.2 Single-user toilet facility and bathing room fixtures to:</p> <p>403.1.2 Single-user toilet facility and bathing room fixtures. The plumbing fixtures located in single- user toilet facilities and bathing rooms, including family or assisted use toilet and bathing rooms that are required by Section 1109.2.1 of the International Building Code, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet facilities and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified <u>as being available for use by either all persons regardless of their sex.</u></p>		X			Clarification
P19-18	<p>Change existing definition for 403.3.1 Access and 403.5 Drinking fountain location to:</p> <p>403.3.1 Access. The route to the public toilet facilities required by Section 403.3 shall not pass through kitchens, storage rooms or closets. Access to the required facilities shall be from within the building or from the exterior of the building. Routes shall comply with the accessibility requirements of the International Building</p>		X			Clarification

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Code.The public shall have access to the required toilet facilities at all times that the building is occupied.</p> <p>403.5 Drinking fountain location. Drinking fountains shall not be required to be located in individual tenant spaces provided that public drinking fountains are located within a distance of travel of 500 feet (152 m) of the most remote location in the tenant space and not more than one story above or below the tenant space. Where the tenant space is in a covered or open mall, such distance shall not exceed 300 feet (91 m). Drinking fountains shall be located on an accessible route.</p>					
P21-18	<p>Change existing definition for 403.3.3 Location of toilet facilities in occupancies other than malls to:</p> <p>403.3.3 Location of toilet facilities in occupancies other than malls. In occupancies other than covered and open mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).</p> <p>Exception Exceptions:</p> <ol style="list-style-type: none"> 1. The location and maximum distances of travel to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are approved. 2. <u>The location and maximum distances of travel to required public and employee facilities in Group S occupancies are permitted to exceed that required by this section, provided that the location and maximum distance of travel are approved</u> 	X			Minimal	Clarification
P22-18 Part I	<p>Change existing definition for 1109.2.1.7 Privacy to:</p> <p>2018 International Building Code</p> <p>1109.2.1.7 Privacy. Doors to family or assisted-use toilet and bathing rooms shall be securable from within the room <u>and be provided with an "occupied" indicator.</u></p>			X	\$500/door	Clarification
P23-18	<p>Add new definition for 403.6 Service sink location as follows:</p> <p>403.6 Service sink location. <u>Service sinks shall not be required to be located in individual tenant spaces in a covered mall provided that service sinks are located within a distance of travel of 300 feet (91 m) of the most remote location in the tenant space and not more than one story above or below the tenant space. Service sinks shall be located on an accessible route.</u></p>	X			Minimal	Necessary addition for clarification

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
P24-18	Change existing definition for 404.3 Exposed pipes and surfaces to: 2018 International Plumbing Code 404.3 Exposed pipes and surfaces. Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact. Pipe coverings shall comply with ASME A112.18.9.		X			Removes an unnecessary definition
P25-18	Change existing definition for 404.3 Exposed pipes and surfaces to: 404.3 Exposed pipes and surfaces. Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact. Pipe coverings shall comply with ASME A112.18.9 or <u>ASTM C1822</u> . Add new standard(s) for ASTM. ASTM <u>C1822-2015: Standard Specification for Insulating Covers on Accessible Lavatory Piping</u>		X			Allows both the ASME A112 18.9 standard and ASTM C1822 compliance
P27-18	Change existing definition for 405.3.1 Water closets, urinals, lavatories and bidets to: 2018 International Plumbing Code 405.3.1 Water closets, urinals, lavatories and bidets. A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction. For water closets, urinals, or bidets, where <u>Where</u> partitions or other obstructions do not separate adjacent fixtures, water closets, urinals, or bidets, the fixtures shall not be set closer than 30 inches (762 mm) center to center between adjacent fixtures <u>or adjacent water closets, urinals, or bidets</u> . There shall be not less than a 21-inch (533 mm) clearance in front of a water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762 mm) in width and not less than 60 inches (1524 mm) in depth for floor-mounted water closets and not less than 30 inches (762 mm) in width and 56 inches (1422 mm) in depth for wall-hung water closets. Exception: An accessible children's water closet shall be set not closer than 12 inches (305 mm) from its center to the required partition or to the wall on one side.		X			Clarification
P30-18	Change existing definition for 405.4.3 Securing wall-hung water closet bowls to: 405.4.3 Securing wall-hung water closet bowls. Wall-hung water closet bowls shall be supported by a concealed metal carrier that is attached to the building structural members so that strain is		X			Adds an optional type of carrier that can be used for

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	not transmitted to the el set- fix ture connector or any other part of the plumbing system. The carrier shall conform to <u>ASME A112.6.1M or ASME A112.6.2.</u> Add new standard(s) for ASME. ASME <u>A112.6.1M-1997 (R2017): Floor Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use</u>					securing a water closet bowl to a wall.
P31-18	Change existing definition for 407.2 Bathtub waste outlets and overflows to: 407.2 Bathtub waste outlets and overflows. Bathtubs shall be equipped with a waste outlet and an overflow outlet. The outlets shall be connected to waste tubing or piping that is not less than 1½ inches (38 mm) in diameter. The waste outlet shall be equipped with a water-tight stopper. <u>Where an overflow is installed, the overflow shall be not less than 1½ inches (38mm) in diameter.</u>		X			Clarification
P32-18	Change existing definition for 408.1 Approval to: 408.1 Approval. Bidets shall conform to ASME A112.19.2/CSA B45.1. <u>or ASME A112.19.3/CSA B45.4.</u>		X			Clarification
P33-18 Part I	Change existing definition for 408.3 Bidet water temperature to: 408.3 Bidet water temperature. The discharge water temperature from a bidet fitting shall be limited to not greater than 110°F (43°C) by a water-temperature-limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.		X			Clarification
P33-18 Part I	Change existing definition for P2721.2 Bidet water temperature to: P2721.2 Bidet water temperature. The discharge water temperature from a bidet fitting shall be limited to not greater than 110°F (43°C) by a water-temperature-limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.		X			Clarification
P36-18	Change existing definition for 410.1 Approval to: 410.1 Approval. Drinking fountains shall conform to ASME A112.19.1/CSA B45.2 or ASME A112.19.2/CSA B45.1, <u>or ASME A112.19.3/CSA B45.4</u> and water coolers shall conform to ASHRAE 18. Drinking fountains, water coolers and water dispensers shall conform to NSF 61, Section 9. Electrically operated, refrigerated drinking water coolers and water dispensers shall be listed and labeled in accordance with UL 399.		X			Clarification
P38-18 Part I	Add new definition for WATER DISPENSER and Substitution to 2018 IBC as follows:		X			Adds the relevant

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>WATER DISPENSER. A plumbing fixture that is manually controlled by the user for the purpose of dispensing potable drinking water into a receptacle such as a cup, glass or bottle. Such fixture is connected to the potable water distribution system of the premises. This definition includes a freestanding apparatus for the same purpose that is not connected to the potable water distribution system and that is supplied with potable water from a container, bottle or reservoir.</p> <p>Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies where more than two drinking fountains are required, water dispensers shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.</p> <p>Change existing definition for Drinking, Minimum number, More than the minimum number, and [P] 2902.6 Small occupancies to:</p> <p>Drinking High and low drinking fountains. Where drinking fountains are provided on an exterior site, on a floor or within a secured area, the drinking fountains shall be provided in accordance with Sections 1109.5.1 and 1109.5.2.</p> <p>Minimum number. Not fewer than two drinking fountains shall be provided. One drinking fountain shall comply with the requirements for people who use a wheelchair and one drinking fountain shall comply with the requirements for standing persons.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains. 2. Where drinking fountains are primarily for children's use, drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor. <p>More than the minimum number. Where more than the minimum number of drinking fountains specified in Section 1109.5.1 is provided, 50 percent of the total number of drinking fountains provided shall comply with the requirements for people who use a wheelchair and 50 percent of the total number of drinking fountains provided shall comply with the requirements for standing persons.</p>					sections found in IBC to IPC.

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down, provided that the total number of drinking fountains complying with this section equals 100 percent of the drinking fountains. 2. Where drinking fountains are primarily for children’s use, drinking fountains for people using wheelchairs shall be permitted to comply with the children’s provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor. <p>[P] 2902.6 Small occupancies. Drinking fountains shall not be required for an occupant load of 15 or fewer.</p>					
P38-18 Part II	<p>Add new definition for 410.3 High and low drinking fountains and 410.3.2 More than the minimum number as follows:</p> <p><u>410.3 High and low drinking fountains.</u> Where drinking fountains are provided on an exterior site, on a floor or within a secured area, the drinking fountains shall be provided in accordance with Sections 410.3.1 and 410.3.2.</p> <p><u>410.3.2 More than the minimum number.</u> Where more than the minimum number of drinking fountains specified in Section 1109.5.1 is provided, 50 percent of the total number of drinking fountains provided shall comply with the requirements for persons who use a wheelchair and 50 percent of the total number of drinking fountains provided shall comply with the requirements for standing persons.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down, provided that the total number of drinking fountains complying with this section equals 100 percent of the drinking fountains. 2. Where drinking fountains are primarily for children's use, drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor. <p>Change existing definition for [BE] 410.3 High and low drinking fountains and 410.4 Substitution to:</p> <p><u>[BE] 410.3 410.3.1 High and low drinking fountains-Minimum number.</u> Where drinking fountains are required, not Not fewer</p>		X		Adds the relevant sections found in IBC to IPC.	

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>than two drinking fountains shall be provided. One drinking fountain shall comply with the requirements for people who use a wheelchair and one drinking fountain shall comply with the requirements for standing persons.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains. 2. Where drinking fountains are primarily for children's use, the drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor. <p>410.4 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies where <u>more than two</u> drinking fountains are required, <i>water dispensers</i> shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.</p>					
P39-18	<p>Change existing definition for 410.4 Substitution and [BE] 410.3 High and low drinking fountains to:</p> <p>410.4 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies where <u>three or more</u> drinking fountains are required, water dispensers shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.</p> <p>[BE] 410.3 High and low drinking fountains. Where drinking fountains are required, not fewer than two drinking fountains shall be provided. One drinking fountain shall comply with the requirements for people who use a wheelchair and one drinking fountain shall comply with the requirements for standing persons.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains. 2. Where drinking fountains are primarily for children's use, the drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 		X			Clarification

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	mm) minimum above the floor.					
P42-18	Change existing definition for 411.3 Water supply to: 411.3 Water supply. Where hot and cold water is supplied to an emergency shower or eyewash station, the temperature of the water supply shall only be controlled by a temperature actuated mixing valve complying with ASSE 1071. <u>Where water is supplied directly to an emergency shower or eyewash station from a water heater, the water heater shall comply with ASSE 1085.</u>	X			Minimal	Clarification
P44-18 Part I	Change existing definition for 412.3 Individual shower valves, 412.4 Multiple (gang) showers, and 412.5 Bathtub and whirlpool bathtub valves to: 412.3 Individual shower valves. Individual shower and tubshower combination valves shall be balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and . <u>Such valves shall be installed at the point of use. Shower and tub-shower combination valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions to provide water at a temperature not to exceed 120°F. In-line thermostatic valves shall not be utilized for compliance with this section.</u> 412.4 Multiple (gang) showers. Multiple (gang) showers supplied with a single-tempered water supply pipe shall have the water supply for such showers controlled by an approved automatic temperature control mixing valve that conforms to ASSE 1069 or CSA B125.3, or each shower head shall be individually controlled by a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valve that conforms to ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and <u>that</u> is installed at the point of use. Such valves shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturers' instructions to provide water at a temperature not to exceed 120°F. <u>Access shall be provided to a ASSE 1069 or CSA B125.3 valve.</u> 412.5 Bathtub and whirlpool bathtub valves. The hot water supplied to bathtubs Bathtubs and whirlpool bathtubs bathtub valves shall be limited to not greater than 120°F (49°C) have or be supplied by a water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3, except where such protection is otherwise provided by a valves <u>are combination tub/shower valve valves</u> in accordance with		X			Clarification

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Section 412.3. The water temperature³ limiting device required by this section shall be equipped with a means to limit the maximum setting of the device to 120°F (49°C), and, where adjustable, shall be field adjusted in accordance with the manufacturer's instructions to provide hot water at a temperature not to exceed 120°F (49°C). Access shall be provided to water temperature limiting devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.</p> <p>Exception: Access is not required for non-adjustable water temperature limiting devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 and are integral with a fixture fitting, provided that the fixture fitting itself can be accessed for replacement.</p>					
P44-18 Part II	<p>Change existing definition for P208.4 Shower control valves and P2713.3 Bathtub and whirlpool bathtub valves to:</p> <p>P2708.4 Shower control valves. Individual shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance/balanced-pressure, thermostatic-mixing or combination balanced-pressure-balance/thermostatic-mixing valve types with a high limit stop in accordance with/thermostatic valves that conform to the requirements of ASSE 1016/ASME A112.1016/CSA B125.16. The high limit stop shall be set to limit the water temperature to not greater than 120°F (49°C) or ASME A112.18.1/CSA B125.1. Such valves shall be installed at the point of use. Shower and tub-shower combination valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions to provide water at a temperature not to exceed 120°F. In-line thermostatic valves shall not be used/ utilized for compliance with this section.</p> <p>P2713.3 Bathtub and whirlpool bathtub valves. Hot water supplied to bathtubs Bathtubs and whirlpool bathtubs bathtub valves shall be limited to a temperature of not greater than 120°F (49°C) have or be supplied by a water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3, except where such protection is otherwise provided by a valves are combination tub/shower valve valves in accordance with Section P2708.4. The water temperature³ limiting device required by this section shall be equipped with a means to limit the maximum setting of the device to 120°F (49°C), and, where adjustable, shall be field adjusted in accordance with the manufacturer's instructions to</p>		X		Clarification	

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>provide hot water at a temperature not to exceed 120°F (49°C). Access shall be provided to water temperature limiting devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.</u></p> <p>Exception: <u>Access is not required for non-adjustable water temperature limiting devices that conform to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 and are integral with a fixture fitting, provided that the fixture fitting itself can be accessed for replacement.</u></p>					
P46-18 Part I	<p>Change existing definition for 412.3 Individual shower valves and 412.4 Multiple (gang) showers to:</p> <p>412.3 Individual shower valves. Individual shower and tubshower combination valves shall be balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and shall be installed at the point of use. <u>Shower control valves shall be rated for the flow rate of the installed showerhead.</u> Shower and tub-shower combination valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions. In-line thermostatic valves shall not be utilized for compliance with this section.</p> <p>412.4 Multiple (gang) showers. Multiple (gang) showers supplied with a single-tempered water supply pipe shall have the water supply for such showers controlled by an approved automatic temperature control mixing valve that conforms to ASSE 1069 or CSA B125.3, or each shower head shall be individually controlled by a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valve that conforms to ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and is installed at the point of use. <u>Where a showerhead is individually controlled, shower control valves shall be rated for the flow rate of the installed showerhead.</u> Such valves shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturers' instructions.</p>		X			Clarification
P46-18 Part II	<p>Change existing definition for P2708.4 Shower control valves to:</p> <p>P2708.4 Shower control valves. Individual shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance, thermostatic-mixing or combination pressure- balance/thermostatic-mixing valve types</p>		X			Clarification

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	with a high limit stop in accordance with ASSE 1016/ASME A112.1016/CSA B125.16. <u>Shower control valves shall be rated for the flow rate of the installed showerhead.</u> The high limit stop shall be set to limit the water temperature to not greater than 120°F (49°C). In-line thermostatic valves shall not be used for compliance with this section.					
P47-18 Part I	Change existing definition for 412.5 Bathtub and whirlpool bathtub valves to: 412.5 Bathtub and whirlpool bathtub valves. The hot water supplied to bathtubs and whirlpool bathtubs shall be limited to not greater than 120°F (49°C) by a water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 , except where such protection is otherwise provided by a combination tub/shower valve in accordance with Section 412.3.		X			Clarification
P47-18 Part II	Change existing definition for P2713.3 Bathtub and whirlpool bathtub valves to: P2713.3 Bathtub and whirlpool bathtub valves. Hot water supplied to bathtubs and whirlpool bathtubs shall be limited to a temperature of not greater than 120°F (49°C) by a water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 , except where such protection is otherwise provided by a combination tub/shower valve in accordance with Section P2708.4.		X			Clarification
P48-18 Part I	Change existing definition for 412.5 Bathtub and whirlpool bathtub valves to: 412.5 Bathtub and whirlpool bathtub valves. The hot water supplied to bathtubs and whirlpool bathtubs shall be limited to not greater than 120°F (49°C) by a water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 <u>or by a water heater complying with ASSE 1082 or ASSE 1084</u> , except where such protection is otherwise provided by a combination tub/shower valve in accordance with Section 412.3. <u>1082-2018: Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.</u>		X			Including a standard in the code will make these devices safer.
P51-18	Change existing definition for 412.10 Head shampoo sink faucets to: 412.10 Head shampoo sink faucets. Head shampoo sink faucets shall be supplied with hot water that is limited to not more than 120°F (49°C) . Each faucet shall have integral check valves to prevent crossover flow between the hot and cold water supply	X			Minimal	Clarification

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	connections. The means for regulating the maximum temperature shall be one of the following: <ol style="list-style-type: none"> 1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70. 2. A thermostatic mixing valve conforming to ASSE 1017. 3. A water heater conforming to ASSE 1082. 4. A water heater conforming to ASSE 1084. 5. A temperature actuated flow reduction device conforming to ASSE 1062. 					
P52-18	Add new definition for 412.11 Pre-rinse spray valve to: <u>412.11 Pre-rinse spray valve.</u> Pre-rinse spray valves for commercial food service shall conform to ASME A112.18.1/CSA B125.1.		X			Necessary addition for clarification
P54-18	Change existing definition for 416.1 Approval to: 416.1 Approval. Domestic food waste disposers shall conform to ASSE 1008 and shall be listed and labeled in accordance with UL 430. <u>Commercial food waste disposers shall be listed and labeled in accordance with UL 430.</u> Food waste disposers shall not increase the drainage fixture unit load on the sanitary drainage system.		X			Clarification
P55-18	Add new definition for GROUP WASH FIXTURE to: <u>GROUP WASH FIXTURE.</u> A type of lavatory that allows more than one person to utilize the fixture at the same time. The fixture has one or more drains and one or more faucets. Change existing definition for 419.1 Approval and 419.3 Lavatory waste outlets to: 419.1 Approval. Lavatories shall conform to ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. Group wash up equipment fixtures shall conform to the requirements of Section 402. Every <u>For determining the number of lavatories required by Table 403.1, every 20 inches (508 mm) of rim space of a group wash fixture</u> shall be considered as one lavatory. 419.3 Lavatory waste outlets. Lavatories <u>and group wash fixtures</u> shall have a waste outlets-outlet <u>an outlet</u> not less than 1 ¹ / ₄ inches (32 mm) in diameter. A strainer, pop-up stopper, crossbar or other device shall be provided to restrict the clear opening of the waste outlet.		X			Clarification
P57-18	Change existing definition for 419.5 Tempered water for public hand-washing facilities to: Tempered water for public hand-washing facilities. Tempered water shall be delivered from lavatories and group wash fixtures located in public toilet facilities provided for customers, patrons		X			Clarification

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	and visitors. Tempered water shall be delivered through an approved water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.					
P58-18 Part II	Change existing definition for [MP] HOT WATER to: [MP] HOT WATER. Water at a temperature greater than or equal to 110°F (43°C). 120°F (49°C).		X			Clarification
P62-18	Change existing definition for 421.1 Approval to: 421.1 Approval. Prefabricated showers and shower compartments shall conform to ASME <u>A112.19.1/CSA B45.2</u> , <u>ASME A112.19.2/CSA B45.1</u> , <u>ASME A112.19.3/CSA B45.4</u> or CSA B45.5/IAPMO Z124. Shower valves for individual showers shall conform to the requirements of Section 412.3.		X			Clarification
P63-18 Part I	Add new definition for 421.3.1 Waste Fittings to: 421.3.1 Waste Fittings. Waste fittings shall conform to ASME <u>A112.18.2/CSA B125.2</u> .		X			Necessary addition for clarification
P63-18 Part II	Add new definition for P2708.2.1 Waste Fittings to: P2708.2.1 Waste Fittings. Waste fittings shall conform to ASME <u>A112.18.2/CSA B125.2</u> .		X			Necessary addition for clarification
P66-18	Change existing definition for 423.3 Footbaths and pedicure baths to: 423.3 Footbaths and pedicure baths. The water supplied to specialty plumbing fixtures, such as pedicure chairs having an integral foot bathtub and footbaths, shall be limited to not greater than 120°F (49°C) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 or from a water heater complying with ASSE 1082 or ASSE 1084.		X			Clarification
P67-18	Change existing definition for 423.3 Footbaths and pedicure baths to: 423.3 Footbaths and pedicure baths. The water supplied to specialty plumbing fixtures, such as pedicure chairs having an integral foot bathtub and footbaths, shall be limited to not greater than 120°F (49°C) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.		X			Clarification
P68-18	Change existing definition for 425.1 Approval to: Approval. Water closets shall conform to the water consumption requirements of Section 604.4 and shall conform to ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. Water closets shall conform to the hydraulic performance requirements of ASME A112.19.2/CSA B45.1. Water closet tanks shall conform to ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124. Electro-		X			Clarification

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>hydraulic water closets shall comply with ASME A112.19.2/CSA B45.1. Water closets equipped with a dual flushing device shall comply with ASME A112.19.14.</p> <p>Add new definition for DUAL FLUSHING DEVICE, 425.1.1 Hydraulic performance, 425.1.2 Water closet tanks, and 425.1.3 Dual flush water closets to:</p> <p><u>DUAL FLUSHING DEVICE.</u> A feature that allows the user to flush a water closet with either a reduced or full volume of water depending upon bowl contents.</p> <p><u>425.1.1 Hydraulic performance.</u> Water closets shall conform to the hydraulic performance requirements of ASME A112.19.2/CSA B45.1.</p> <p><u>425.1.2 Water closet tanks.</u> Water closet tanks shall conform to ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 or CSA B45.5/IAPMO Z124.</p> <p><u>425.1.3 Dual flush water closets.</u> Water closets equipped with a dual flushing device shall comply with ASME A112.19.14.</p>					
P69-18	<p>Change existing definition for 501.2 Water heater as space heater to:</p> <p>501.2 Water heater as space heater. Where a combination potable water heating and space heating system requires water for space heating at temperatures greater than 140°F (60°C), a master thermostatic mixing valve complying with ASSE 1017 shall be provided to limit the water supplied to the potable hot water distribution system to a temperature of 140°F (60°C) or less. The potability of the water shall be maintained throughout the system. <u>Requirements for combination potable water heating and space heating systems shall be in accordance with the International Mechanical Code.</u></p>		X			Clarification
P71-18 Part I	<p>Change existing definition for 501.2 Water heater as space heater and 607.2.2 Piping for recirculation systems having master thermostatic to:</p> <p>501.2 Water heater as space heater. Where a combination potable water heating and space heating system requires water for space heating at temperatures greater than 140°F (60°C), a master thermostatic<u>temperature-actuated</u> mixing valve complying with ASSE 1017 shall be provided to limit the water supplied to the potable hot water distribution system to a temperature of 140°F (60°C) or less. The potability of the water shall be maintained throughout the system.</p> <p>607.2.2 Piping for recirculation systems having master thermostatic<u>temperature-actuated mixing</u> valves. Where a thermostatic<u>temperature-actuated</u> mixing valve is used in a system with a hot water recirculating pump, the hot water or</p>		X			Clarification

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	tempered water return line shall be routed to the cold water inlet pipe of the water heater and the cold water inlet pipe or the hot water return connection of the thermostatic <u>temperature-actuated</u> mixing valve.					
P71-18 Part II	Change existing definition for P2802.1 Water temperature control and P2803.2 Temperature control to: P2802.1 Water temperature control. Where heated water is discharged from a solar thermal system to a hot water distribution system, a thermostatic-temperature-actuated mixing valve complying with ASSE 1017 shall be installed to temper the water to a temperature of not greater than 140°F (60°C). Solar thermal systems supplying hot water for both space heating and domestic uses shall comply with Section P2803.2. A temperature-indicating device shall be installed to indicate the temperature of the water discharged from the outlet of the mixing valve. The thermostatic-temperature-actuated mixing valve required by this section shall not be a substitute for water-temperature limiting devices required by Chapter 27 for specific fixtures. P2803.2 Temperature control. Where a combination water heater-space heating system requires water for space heating at temperatures exceeding 140°F (60°C), a master-thermostatic-temperature-actuated mixing valve complying with ASSE 1017 shall be installed to temper the water to a temperature of not greater than 140°F (60°C) for domestic uses.		X			Clarification
P77-18 Part I	Change existing definition for 602.3.5 Pumps to: 602.3.5 Pumps. Pumps shall be rated for the transport of potable water. Pumps in an individual water supply system shall be constructed and installed so as to prevent contamination from entering a potable water supply through the pump units. Pumps <u>intended to supply drinking water shall conform to NSF 61.</u> <u>Pumps shall be sealed to the well casing or covered with a water-tight seal.</u> Pumps shall be designed to maintain a prime and installed such that ready access is provided to the pump parts of the entire assembly for repairs.		X			Clarification
P77-18 Part II	Change existing definition for P2903.3.1 Pumps handling drinking water to: <u>P2903.3.1 Pumps handling drinking water.</u> Pumps intended to <u>supply drinking water shall conform to NSF 61.</u>		X			Clarification
P79-18 Part II	Change existing definition for P2903.1 Water supply system design criteria to: P2903.1 Water supply system design criteria. The water service and water distribution systems shall be designed and pipe sizes		X			Clarification

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																
		Decrease	None	Increase																																		
Sub Code:																																						
	<p>shall be selected such that under conditions of sized for peak demand, the capacities at the point of outlet discharge shall be not less than using values shown in Table P2903.1.</p> <p style="text-align: center;">TABLE P2903.1 REQUIRED CAPACITIES AT POINT OF OUTLET DISCHARGE FLOW RATE AND PRESSURES FOR DESIGNING PIPING SYSTEMS</p>																																					
P83-18	<p>Change existing definition for TABLE 605.3 WATER SERVICE PIPE to:</p> <p style="text-align: center;">TABLE 605.3 WATER SERVICE PIPE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MATERIAL</th> <th style="width: 50%;">STANDARD</th> </tr> </thead> <tbody> <tr> <td>Acrylonitrile butadiene styrene (ABS) plastic pipe</td> <td>ASTM D1527; ASTM D2282</td> </tr> <tr> <td>Chlorinated polyvinyl chloride (CPVC) plastic pipe</td> <td>ASTM D2846; ASTM F441; ASTM F442; CSA B137.6</td> </tr> <tr> <td>Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)</td> <td>ASTM F2855</td> </tr> <tr> <td>Copper or copper-alloy pipe</td> <td>ASTM B42; ASTM B302</td> </tr> <tr> <td>Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)</td> <td>ASTM B75; ASTM B88; ASTM B251; ASTM B447</td> </tr> <tr> <td>Cross-linked polyethylene (PEX) plastic pipe and tubing</td> <td>ASTM F876; AWWA C904; CSA B137.5</td> </tr> <tr> <td>Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe</td> <td>ASTM F1281; ASTM F2262; CSA B137.10</td> </tr> <tr> <td>Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)</td> <td>ASTM F1986</td> </tr> <tr> <td>Ductile iron water pipe</td> <td>AWWA C151/A21.51; AWWA C115/A21.15</td> </tr> <tr> <td>Galvanized steel pipe</td> <td>ASTM A53</td> </tr> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM D2239; ASTM D3035; AWWA C901; CSA B137.11</td> </tr> <tr> <td>Polyethylene (PE) plastic tubing</td> <td>ASTM D2737; AWWA C901; CSA B137.1</td> </tr> <tr> <td>Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe</td> <td>ASTM F1282; CSA B137.9</td> </tr> <tr> <td>Polyethylene of raised temperature (PE-RT) plastic tubing</td> <td>ASTM F2769; CSA B137.18</td> </tr> <tr> <td>Polypropylene (PP) plastic pipe or tubing</td> <td>ASTM F2389; CSA B137.11</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D1527; ASTM D2282	Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6	Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855	Copper or copper-alloy pipe	ASTM B42; ASTM B302	Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75; ASTM B88; ASTM B251; ASTM B447	Cross-linked polyethylene (PEX) plastic pipe and tubing	ASTM F876; AWWA C904; CSA B137.5	Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10	Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986	Ductile iron water pipe	AWWA C151/A21.51; AWWA C115/A21.15	Galvanized steel pipe	ASTM A53	Polyethylene (PE) plastic pipe	ASTM D2239; ASTM D3035; AWWA C901; CSA B137.11	Polyethylene (PE) plastic tubing	ASTM D2737; AWWA C901; CSA B137.1	Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	ASTM F1282; CSA B137.9	Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18	Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11		X			Adding another standard for stainless steel piping into the code increases flexibility in choices of piping.
MATERIAL	STANDARD																																					
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D1527; ASTM D2282																																					
Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6																																					
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Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	ASTM F1282; CSA B137.9																																					
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18																																					
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11																																					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY		IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
	Polyvinyl chloride (PVC) plastic pipe	ASTM D 1785; ASTM D2241; ASTM D2672; CSA B137.3					
	Stainless steel pipe (Type 304/304L)	ASTM A269, ASTM A312; ASTM A778					
	Stainless steel pipe (Type 316/316L)	ASTM A269, ASTM A312; ASTM A778					
P84-18	Change existing definition for TABLE 605.3 WATER SERVICE PIPE to:			X			Clarification
	TABLE 605.3 WATER SERVICE PIPE						
	MATERIAL	STANDARD					
	Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D1527; ASTM D2282					
	Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6					
	Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855					
	Copper or copper-alloy pipe	ASTM B42; ASTM B43, ASTM B302,					
	Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75; ASTM B88; ASTM B251; ASTM B447					
	Cross-linked polyethylene (PEX) plastic pipe and tubing	ASTM F876; AWWA C904; CSA B137.5					
	Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10					
	Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986					
	Ductile iron water pipe	AWWA C151/A21.51; AWWA C115/A21.15					
	Galvanized steel pipe	ASTM A53					
	Polyethylene (PE) plastic pipe	ASTM D2239; ASTM D3035; AWWA C901; CSA B137.11					
	Polyethylene (PE) plastic tubing	ASTM D2737; AWWA C901; CSA B137.1					
	Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	ASTM F1282; CSA B137.9					

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Sub Code:																										
	Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18																								
	Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11																								
	Polyvinyl chloride (PVC) plastic pipe	ASTM D 1785; ASTM D2241; ASTM D2672; CSA B137.3																								
	Stainless steel pipe (Type 304/304L)	ASTM A312; ASTM A778																								
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P86-18	Change existing definition for TABLE 605.5 PIPE FITTINGS to: TABLE 605.5 PIPE FITTINGS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MATERIAL</th> <th style="width: 50%;">STANDARD</th> </tr> </thead> <tbody> <tr> <td>Acrylonitrile butadiene styrene (ABS) plastic</td> <td>ASTM D2468</td> </tr> <tr> <td>Cast iron</td> <td>ASME B16.4</td> </tr> <tr> <td>Chlorinated polyvinyl chloride (CPVC) plastic</td> <td>ASSE 1061; ASTM D2846; ASTM F437; ASTM F 438; ASTM F439; CSA B137.6</td> </tr> <tr> <td>Copper or copper alloy</td> <td>ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F1476; ASTM F1548; ASTM F3226</td> </tr> <tr> <td>Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)</td> <td>ASTM F1986</td> </tr> <tr> <td>Fittings for cross-linked polyethylene (PEX) plastic tubing</td> <td>ASSE 1061, ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098, ASTM F2159; ASTM F2434; ASTM F2735; CSA B137.5</td> </tr> <tr> <td>Fittings for polyethylene of raised temperature (PE-RT) plastic tubing</td> <td>ASSE 1061, ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; CSA B137.18</td> </tr> <tr> <td>Gray iron and ductile iron</td> <td>ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;</td> </tr> <tr> <td>Insert fittings for polyethylene/aluminum/polyethylene (PE- AL-PE) and cross-linked</td> <td>ASTM F1974; ASTM F1281; ASTM F1282; CSA B137.9; CSA B137.10</td> </tr> </tbody> </table>		MATERIAL	STANDARD	Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468	Cast iron	ASME B16.4	Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F 438; ASTM F439; CSA B137.6	Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F1476; ASTM F1548; ASTM F3226	Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986	Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061, ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098, ASTM F2159; ASTM F2434; ASTM F2735; CSA B137.5	Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061, ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; CSA B137.18	Gray iron and ductile iron	ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;	Insert fittings for polyethylene/aluminum/polyethylene (PE- AL-PE) and cross-linked	ASTM F1974; ASTM F1281; ASTM F1282; CSA B137.9; CSA B137.10		X		Provides a reference standard for Stainless Steel Press-Connect Fittings and provide an additional Press-connect standard for Copper and copper alloy fittings.
MATERIAL	STANDARD																									
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468																									
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Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061, ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; CSA B137.18																									
Gray iron and ductile iron	ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;																									
Insert fittings for polyethylene/aluminum/polyethylene (PE- AL-PE) and cross-linked	ASTM F1974; ASTM F1281; ASTM F1282; CSA B137.9; CSA B137.10																									

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		Decrease	None	Increase																				
Sub Code:																								
	<table border="1"> <tr> <td>polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)</td> <td></td> </tr> <tr> <td>Malleable iron</td> <td>ASME B16.3</td> </tr> <tr> <td>Metal (brass) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)</td> <td>ASTM F1974</td> </tr> <tr> <td>Polyethylene (PE) plastic pipe</td> <td>ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1</td> </tr> <tr> <td>Polypropylene (PP) plastic pipe or tubing</td> <td>ASTM F2389; CSA B137.11</td> </tr> <tr> <td>Polyvinyl chloride (PVC) plastic</td> <td>ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3</td> </tr> <tr> <td>Stainless steel (Type 304/304L)</td> <td>ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; <u>ASTM F3226</u></td> </tr> <tr> <td>Stainless steel (Type 316/316L)</td> <td>ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; <u>ASTM F3226</u></td> </tr> <tr> <td>Steel</td> <td>ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548</td> </tr> </table> <p>Add new standard(s) for ASTM. ASTM <u>F3226/F3226M-16: Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing</u></p>	polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)		Malleable iron	ASME B16.3	Metal (brass) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974	Polyethylene (PE) plastic pipe	ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1	Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11	Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3	Stainless steel (Type 304/304L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; <u>ASTM F3226</u>	Stainless steel (Type 316/316L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; <u>ASTM F3226</u>	Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548					
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Malleable iron	ASME B16.3																							
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Polyethylene (PE) plastic pipe	ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1																							
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Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3																							
Stainless steel (Type 304/304L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; <u>ASTM F3226</u>																							
Stainless steel (Type 316/316L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; <u>ASTM F3226</u>																							
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548																							
P87-18 Part II	<p>Change existing definition for TABLE P2906.6 PIPE FITTINGS to:</p> <p style="text-align: center;">TABLE P2906.6 PIPE FITTINGS</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Acrylonitrile butadiene styrene (ABS) plastic</td> <td>ASTM D2468</td> </tr> <tr> <td>Cast-iron</td> <td>ASME B16.4</td> </tr> <tr> <td>Chlorinated polyvinyl chloride (CPVC) plastic</td> <td>ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6</td> </tr> <tr> <td>Copper or copper alloy</td> <td>ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; <u>ASTM F3226</u></td> </tr> <tr> <td>Cross-linked polyethylene/aluminum/high-</td> <td>ASTM F1986</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468	Cast-iron	ASME B16.4	Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6	Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; <u>ASTM F3226</u>	Cross-linked polyethylene/aluminum/high-	ASTM F1986		X			Add ASTM standard for press-connect joint fittings to the IRC						
MATERIAL	STANDARD																							
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468																							
Cast-iron	ASME B16.4																							
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6																							
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; <u>ASTM F3226</u>																							
Cross-linked polyethylene/aluminum/high-	ASTM F1986																							

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	density polyethylene (PEX- AL- HDPE)					
	Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; CSA B137.5				
	Gray iron and ductile iron	AWWA C110/A21.10; AWWA C153/A21.53				
	Malleable iron	ASME B16.3				
	Insert fittings for Polyethylene/aluminum/polyethylene (PE- AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10				
	Polyethylene (PE) plastic	ASTM D 2609; CSA B137.1				
	Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F 2159; ASTM F2735; ASTM F2769; CSA B137.18				
	Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11				
	Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3				
	Stainless steel (Type 30 ⁴ / 30 4L) pipe	ASTM A312; ASTM A778				
	Stainless steel (Type 31 ⁶ / 31 6L) pipe	ASTM A312; ASTM A778				
	Steel	ASME B16.9; ASME B16.11; ASME B16.28				
P88-18 Part I	<p>Change existing definition for 605.12.3 Solder joints and 605.13.6 Solder joints to:</p> <p>605.12.3 Solder joints. Solder joints shall be made in accordance with ASTM B828. Cut tube ends shall be reamed to the full inside diameter of the tube end. Joint surfaces shall be cleaned. A flux conforming to ASTM B813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B32. The joining of water supply piping shall be made with lead-free solder and fluxes. "Lead free" shall mean a chemical composition equal to or less than 0.2-percent lead. <u>Solder and flux joining pipe or fittings intended to supply drinking water shall conform to NSF 61.</u></p> <p>605.13.6 Solder joints. Solder joints shall be made in accordance with the methods of ASTM B828. Cut tube ends</p>		X			Clarification

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	shall be reamed to the full inside diameter of the tube end. Joint surfaces shall be cleaned. A flux conforming to ASTM B813 shall be applied. The joint shall be soldered with a solder conforming to ASTM B32. The joining of water supply piping shall be made with lead-free solder and flux. "Lead free" shall mean a chemical composition equal to or less than 0.2-percent lead. <u>Solder and flux joining pipe or fittings intended to supply drinking water shall conform to NSF 61.</u>					
P88-18 Part II	Change existing definition for 605.12.3 Solder joints and 605.13.6 Solder joints to: P2906.15 Soldered and brazed joints. Soldered joints in copper and copper alloy tubing shall be made with fittings approved for water piping and shall conform to ASTM B828. Surfaces to be soldered shall be cleaned bright. Fluxes for soldering shall be in accordance with ASTM B813. Brazing fluxes shall be in accordance with AWS A5.31M/A5.31. Solders and fluxes used in potable water-supply systems shall have a lead content of not greater than 0.2 percent. <u>Solder and flux joining pipe or fittings intended to supply drinking water shall conform to NSF 61.</u>		X			Clarification
P89-18 Part I	Change existing definition for 605.13.7 Push-fit joints to: 605.13.7 Push-fit fitting joints. Push-fit fittings joints shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions.		X			Clarification
P89-18 Part li	Change existing definition for P2906.21 Push-fit joints to: P2906.21 Push-fit fitting joints. Push-fit fittings joints shall be used only on copper-tube-size outside diameter dimensioned CPVC, PEX and copper tubing. Push-fit fittings joints shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions.		X			Clarification
P91-18	Change existing definition for 606.1 Location of full-open valves to: 606.1 Location of full-open valves. Full-open valves shall be installed in the following locations: <ol style="list-style-type: none"> 1. On the building water service pipe from the public water supply near the curb. 2. On the water distribution supply pipe at the entrance into the structure. <ol style="list-style-type: none"> 2.1. <u>In multiple tenant buildings, where a common water supply piping system is installed to supply other than one and two family dwellings, a main shutoff valve shall be provided for each tenant.</u> 3. On the discharge side of every water meter. 4. On the base of every water riser pipe in occupancies other than multiple-family residential occupancies that are two 			X	Minimal	Clarification

DRAFT

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE							
		Decrease	None	Increase									
		Sub Code:											
	<p>stories or less in height and in one- and two-family residential occupancies.</p> <p>5. On the top of every water down-feed pipe in occupancies other than one- and two-family residential occupancies.</p> <p>6. On the entrance to every water supply pipe to a dwelling unit, except where supplying a single fixture equipped with individual stops.</p> <p>7. On the water supply pipe to a gravity or pressurized water tank.</p> <p>8. On the water supply pipe to every water heater.</p>												
P93-18	Delete existing definition for 606.7 Labeling of water distribution pipes in bundles.	X			Minimal	Clarification							
P96-18	Change existing definition for 607.1.1 Temperature limiting means to: 607.1.1 Temperature limiting means. A thermostat control for a water heater shall only serve as the temperature limiting means for the purposes of complying with the requirements of this code for maximum allowable hot or tempered water delivery temperature at fixtures where the water heater complies with ASSE 1082, ASSE 1084 , or ASSE 1085.	X			Minimal	Clarification							
P97-18 Part I	<p>Change existing definition for 608.14.3 Backflow preventer with intermediate atmospheric vent, 608.17.2 Connections to boilers, and TABLE 608.1 APPLICATION OF BACKFLOW PREVENTERS to:</p> <p>608.14.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012, <u>ASSE 1081</u>, or CSA B64.3. These devices shall be permitted to be installed where subject to continuous pressure conditions. The relief opening shall discharge by air gap and shall be prevented from being submerged.</p> <p>608.17.2 Connections to boilers. The potable supply to the boiler shall be equipped with a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012, <u>ASSE 1081</u>, or CSA B64.3. Where conditioning chemicals are introduced into the system, the potable water connection shall be protected by an air gap or a reduced pressure principle backflow preventer, complying with ASSE 1013, CSA B64.4 or AWWA C511.</p> <p style="text-align: center;">TABLE 608.1 APPLICATION OF BACKFLOW PREVENTERS</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 25%;">DEVICE</th> <th style="width: 15%;">DEGREE OF HAZARD <small>a</small></th> <th style="width: 30%;">APPLICATION^b</th> <th style="width: 30%;">APPLICABLE STANDARDS</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DEVICE	DEGREE OF HAZARD <small>a</small>	APPLICATION ^b	APPLICABLE STANDARDS						X		<p>ASSE 1081 covers devices that have combined products compliant to both ASSE 1003 and ASSE 1012.</p>
DEVICE	DEGREE OF HAZARD <small>a</small>	APPLICATION ^b	APPLICABLE STANDARDS										

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY				IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
	Decrease	None	Increase						
Sub Code:									
	Backflow prevention assemblies:								
	Double check backflow prevention assembly and double check fire protection backflow prevention assembly	Low hazard	Backpressure or backsiphonage Sizes 3/8" - 16"	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1					
	Double check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or backsiphonage Sizes 2" - 16"	ASSE 1048					
	Pressure vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2" - 2"	ASSE 1020, CSA B64.1.2					
	Reduced pressure principle backflow prevention assembly and reduced pressure principle fire protection backflow assembly	High or low hazard	Backpressure or backsiphonage Sizes 3/8" - 16"	ASSE 1013, AWWA C511, CSA B64.4, CSA B64.4.1					
	Reduced pressure detector fire protection backflow prevention assemblies	High or low hazard	Backsiphonage or backpressure Fire sprinkler systems) Sizes 1/4" - 2"	ASSE 1047					
	Backflow preventer plumbing devices:								
	water closet flush tanks								
	Backflow preventer for carbonated beverage machines	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 3/8"	ASSE 1022					
	Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 3/4"	ASSE 1012, CSA B64.3					
	<u>Backflow preventer with intermediate atmospheric vent and pressure reducing valve</u>	<u>Low hazard</u>	<u>Backpressure or backsiphonage Sizes 1/4" - 3/4"</u>	<u>ASSE 1081</u>					
	Dual-check-valve-type backflow preventer	Low hazard	Backpressure or backsiphonage Sizes 1/4" - 1"	ASSE 1024, CSA B64.6					
	Hose connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure, backpressure or backsiphonage Sizes 1/2" - 1"	ASMEA112.21.3, ASSE 1052, CSA B64.2.1.1					
	Hose connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage Sizes 1/2", 3/4", 1"	ASMEA112.21.3, ASSE 1011, CSA B64.2, CSA B64.2.1					
	Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and backsiphonage	ASSE 1035, CSA B64.7					
	Pipe-applied atmospheric-type vacuum breaker	High or low hazard	Backsiphonage only Sizes 1/4" - 4"	ASSE 1001, CSA B64.1.1					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY				IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE												
					Decrease	None	Increase														
Sub Code:																					
	Vacuum breaker wall hydrants, frost-resistant, automatic- draining-type	High or low hazard	Low head backpressure or backsiphonage Sizes ³ / 4", 1"	ASME A112.21.3, ASSE 1019, CSA B64.2.2																	
	Other means or methods:																				
	Air gap	High or low hazard	Backsiphonage or backpressure	ASME A112.1.2																	
	Air gap fittings for use with plumbing fixtures, appliances and appurtenances	High or low hazard	Backsiphonage or backpressure	ASME A112.1.3																	
	Barometric loop	High or low hazard	Backsiphonage only	(See Section 608.14.4)																	
P97-18 Part II	<p>Change existing definition for P2902.3.3 Backflow preventer with intermediate atmospheric vent, P2902.5.1 Connections to boilers, and TABLE P2902.3 APPLICATION OF BACKFLOW PREVENTERS to:</p> <p>P2902.3.3 Backflow preventer with intermediate atmospheric vent. Backflow preventers with intermediate atmospheric vents shall conform to ASSE 1012, <u>ASSE 1081</u>, or CSA B64.3. These devices shall be permitted to be installed where subject to continuous pressure conditions. These devices shall be prohibited as a means of protection where any hazardous chemical additives are introduced downstream of the device. The relief opening shall discharge by air gap and shall be prevented from being submerged.</p> <p>P2902.5.1 Connections to boilers. Where chemicals will not be introduced into a boiler, the potable water supply to the boiler shall be protected from the boiler by a backflow preventer with an intermediate atmospheric vent complying with ASSE 1012, <u>ASSE 1081</u>, or CSA B64.3. Where chemicals will be introduced into a boiler, the potable water supply to the boiler shall be protected from the boiler by an air gap or a reduced pressure principle backflow prevention assembly complying with ASSE 1013, CSA B64.4 or AWWA C511.</p> <p style="text-align: center;">TABLE P2902.3 APPLICATION OF BACKFLOW PREVENTERS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DEVICE</th> <th>DEGREE OF HAZARD^a</th> <th>APPLICATION^b</th> <th>APPLICABLE STANDARDS</th> </tr> </thead> <tbody> <tr> <td>Backflow Prevention Assemblies</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Double-check backflow prevention assembly and double-check fire protection backflow prevention assembly</td> <td>Low hazard</td> <td>Backpressure or backsiphonage Sizes ³/₈" – 16"</td> <td>ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1</td> </tr> </tbody> </table>				DEVICE	DEGREE OF HAZARD ^a	APPLICATION ^b	APPLICABLE STANDARDS	Backflow Prevention Assemblies				Double-check backflow prevention assembly and double-check fire protection backflow prevention assembly	Low hazard	Backpressure or backsiphonage Sizes ³ / ₈ " – 16"	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1		X			ASSE 1081 covers devices that have combined products compliant to both ASSE 1003 and ASSE 1012. These devices have different hydrodynamic needs, hence the new standard for the device.
DEVICE	DEGREE OF HAZARD ^a	APPLICATION ^b	APPLICABLE STANDARDS																		
Backflow Prevention Assemblies																					
Double-check backflow prevention assembly and double-check fire protection backflow prevention assembly	Low hazard	Backpressure or backsiphonage Sizes ³ / ₈ " – 16"	ASSE 1015, AWWA C510, CSA B64.5, CSA B64.5.1																		

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY				IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
	Decrease	None	Increase						
Sub Code:									
	Double-check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or backsiphonage Sizes 2" – 16"	ASSE 1048					
	Pressure vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2" – 2"	ASSE 1020, CSA B64.1.2					
	Reduced pressure principle backflow prevention assembly and reduced pressure principle fire protection backflow prevention assembly	High or low hazard	Backpressure or backsiphonage Sizes 3/8" – 16"	ASSE 1013, AWWA C511, CSA B64.4, CSA B64.4.1					
	Reduced pressure detector fire protection back flow prevention assemblies	High or low hazard	Backsiphonage or backpressure (Fire sprinkler systems)	ASSE 1047					
	Spill-resistant vacuum Backflow Preventer Plumbing Devices	High or low hazard	Backsiphonage only Sizes	ASSE 1056, CSA B64.1.2					
	Antisiphon-type fill valves	High hazard	Backsiphonage only	ASSE 1002/ASME A112.1002/CSA B64.1.1					
	Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes 1/4" – 3/4"	ASSE 1012, CSA B64.3					
	Backflow preventer with intermediate atmospheric vents and pressure reducing valve	Low hazard	Backpressure or backsiphonage Sizes 1/4" – 3/4"	ASSE 1081					
	Dual-check-valve-type backflow preventers	Low hazard	Backpressure or backsiphonage Sizes 1/4" – 1"	ASSE 1024, CSA B64.6					
	Hose-connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure backpressure or	ASSE 1052, CSA B64.2.1.1					
	Hose-connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage Sizes 1/2", 3/4", 1"	ASSE 1011, CSA B64.2, CSA B64.2.1					
	Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and back siphonage	ASSE 1035, CSA B64.7					
	Pipe-applied atmospheric-type vacuum breaker	High or low hazard	Backsiphonage only Sizes 1/4" – 4"	ASSE 1001, CSA B64.1.1					
	Vacuum breaker wall hydrants, frost-resistant, automatic- draining type	High or low hazard	Low head backpressure or backsiphonage Sizes 3/4"	ASSE 1019, CSA B64.2.2					
	Other Means Or Methods								
	Air gap	High or low hazard	Backsiphonage only	ASMEA112.1.2					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY				IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
					Decrease	None	Increase		
Sub Code:									
	Air gap fittings for use with plumbing fixtures, appliances and	High or low hazard	Backsiphonage or backpressure	ASMEA112.1.3					
P98-18 Part I	Change existing definition for 608.15.2.1 Relief port piping to: 608.15.2.1 Relief port piping. The termination of the piping from the relief port or air gap fitting of a backflow preventer shall discharge to an approved indirect waste receptor or to the outdoors where it will not cause damage or create a nuisance. <u>The indirect waste receptor and drainage piping shall be sized to drain the maximum discharge flow rate from the relief port as published by the backflow preventer manufacturer.</u>					X			Clarification
P98-18 Part II	Change existing definition for P2902.6.3 Relief port piping to: P2902.6.3 Relief port piping. The termination of the piping from the relief port or air gap fitting of the backflow preventer shall discharge to an approved indirect waste receptor or to the outdoors where it will not cause damage or create a nuisance. <u>The indirect waste receptor and drainage piping shall be sized to drain the maximum discharge flow rate from the relief port as published by the backflow preventer manufacturer.</u>					X			Clarification
P100-18	Change existing definition for 609.2 Water Service for Group I-2: 609.2 Water service for Group I-2, Condition 2. Hospitals-Group I-2, Condition 2 facilities shall have a minimum of two water service pipes installed in such a manner so as to minimize the potential for an interruption of the supply of water in the event of a water main or water service pipe failure sized such that <u>with the loss of the largest service pipe, the remaining service pipes will meet the water demand for the entire facility. Each water service shall have a shut off valve in the building and a shut off valve at the utility-provided point of connection to the water main or other source of potable water.</u>					X			Clarification
P101-18	Change existing definition for 609.2.1 Tracer to: 609.2.1 Tracer. A yellow-An insulated copper-tracer wire listed or a product designed for that <u>the purpose or other approved conductor shall be installed adjacent to underground nonmetallic piping serving as a water service for a hospital. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG and the wire insulation type shall be suitable for direct burial.</u>						X	Minimal	Clarification
P103-18 Part I	Change existing definition for TABLE 702.3 BUILDING SEWER PIPE to: TABLE 702.3 BUILDING SEWER PIPE					X			Increases flexibility in piping choices for
	MATERIAL		STANDARD						

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																										
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Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; <u>ASTM D2680</u> ; ASTM F628; ASTM F1488; CSA B181.1																															
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P103-18 Part II	<p>Change existing definition for TABLE P3002.2 BUILDING SEWER PIPE to:</p> <p style="text-align: center;">TABLE P3002.2 BUILDING SEWER PIPE</p> <table border="1"> <thead> <tr> <th>MATERIAL</th> <th>STANDARD</th> </tr> </thead> <tbody> <tr> <td>Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall</td> <td>ASTM D2661; <u>ASTM D2680</u>; ASTM F628; ASTM F1488</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; <u>ASTM D2680</u> ; ASTM F628; ASTM F1488		X			Increases flexibility in piping choices for building sewers.																						
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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	Acrylonitrile butadiene styrene (ABS) plastic pipe in sewer and drain diameters, including SDR 42 (PS 20), PS35, SDR 35 (PS 45), PS50, PS100, PS140, SDR 23.5 (PS 150) and PS200; with a solid, cellular core or composite wall	ASTM D2751; ASTM F1488				
	Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters, including PS 25, SDR 41 (PS 28), PS 35, SDR 35 (PS 46), PS 50, PS 100, SDR 26 (PS 115), PS140 and PS 200; with a solid, cellular core or composite wall	ASTM D3034; ASTM F891; ASTM F1488; CSA B182.2; CSA B182.4				
	Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301				
	Concrete pipe	ASTM C14; ASTM C76; CSA A257.1; CSA A257.2				
	Copper or copper-alloy tubing (Type K or L)	ASTM B75/B75M; ASTM B88; ASTM B251				
	Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F714				
	Polyolefin pipe	ASTM F1412; CSA B181.3				
	Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with solid, cellular core or composite wall	ASTM D2665; ASTM D2949; ASTM D3034; ASTM F1412; CSA B182.2; CSA B182.4				
	Polyvinyl chloride (PVC) plastic pipe with a 3.25 inch O.D. and a solid, cellular core or composite	ASTM D2949; ASTM F1488				
	Stainless steel drainage systems, Types 304 and	ASME A112.3.1				
	Vitrified clay pipe	ASTM C425; ASTM C700				
P105-18	Add new definition for 705.2.4 Push-fit joints as follows: 705.2.4 Push-fit joints. Push-fit joints <u>DWV fittings shall be listed and labeled shall conform</u> to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.		X			Necessary addition for clarification
P106-18 Part II	Add new definition for P3003.3.4 Push-fit joints as follows: P3003.3.4 Push-fit fitting joints. Push-fit <u>DWV fittings joints shall conform be listed and labeled</u> to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.		X			Necessary addition for clarification
P108-18	Add new definition for 705.10.4 Push-fit joints and 705.10.4 Push-fit joints as follows: 705.10.4 Push-fit joints. Push-fit joints shall conform to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions. 705.10.4 Push-fit joints. Push-fit joints shall conform to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.		X			Adds push-fit DWV fittings as an option to the IPC

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P113-18 Part I	<p>Add new definition for 708.1.6 Cleanout equivalent as follows: <u>708.1.6 Cleanout equivalent.</u> A fixture trap or a fixture with integral trap, removable without altering concealed piping, shall be acceptable as a cleanout equivalent.</p> <p>Change existing definition for 708.1 Cleanouts required to: 708.1 Cleanouts required. Cleanouts shall be provided for drainage piping in accordance with Sections 708.1.1 through 708.1.11 708.1.12.</p>	X			Minimal	Clarification																				
P113-18 Part II	<p>Add new definition for P3005.2.10.1 Cleanout equivalent as follows: <u>P3005.2.10.1 Cleanout Equivalent.</u> A fixture trap or a fixture with integral trap, removable without altering the concealed piping shall be acceptable as a cleanout equivalent.</p> <p>Change existing definition for P3005.2 Cleanouts required to: P3005.2 Cleanouts required. Cleanouts shall be provided for drainage piping in accordance with Sections P3005.2.1 through P3005.2.11 P3005.2.12.</p>	X			Minimal	Clarification																				
P115-18 Part I	<p>Add new definition for SECTION 717 as follows: <u>SECTION 717</u> <u>RELINING BUILDING SEWERS AND BUILDING DRAINS</u> <u>717.1 General.</u> This section shall govern the relining of existing building sewers and building drainage piping. <u>717.2 Applicability.</u> The relining of existing building sewer and building drainage piping shall be limited to gravity drainage</p>	X			Minimal	Necessary addition for clarification.																				

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>piping, 4 inches (102 mm) in diameter and larger. The relined piping shall be of the same nominal size as existing piping.</p> <p>717.3 Pre-installation requirements. Prior to commencement of the relining installation, existing piping sections to be relined shall be descaled and cleaned. After the cleaning process has occurred and water has been flushed through the system, the piping shall be inspected internally by a recorded video camera survey.</p> <p>717.3.1 Pre-installation recorded video camera survey. The video survey shall include verification of the project address location. The video shall include notations of the cleanout and fitting locations, and the approximate depth of existing piping. The video shall also include notations of the length of piping at intervals no greater than 25 feet.</p> <p>717.4 Permitting. Prior to permit issuance, the code official shall review and evaluate the pre-installation recorded video camera survey to determine if the piping system is capable to be relined in accordance with the proposed lining system manufacturer's installation requirements and applicable referenced standards.</p> <p>717.5 Prohibited applications. Where review of the pre-installation recorded video camera survey reveals that piping systems are not installed correctly or defects exist, relining shall not be permitted. The defective portions of piping shall be exposed and repaired with pipe and fittings in accordance with this code. Defects shall include, but are not limited to, backgrade or insufficient slope, complete pipe wall deterioration or complete separations such as from tree root invasion or improper support.</p> <p>717.6 Relining materials. The relining materials shall be manufactured in compliance with applicable standards and certified as required in Section 303. Fold-and-form pipe relining materials shall be manufactured in compliance with ASTM F1504 or ASTM F1871.</p> <p>717.7 Installation. The installation of relining materials shall be performed in accordance with the manufacturer's installation instructions, applicable referenced standards and this code.</p> <p>717.7.1 Material data report. The installer shall record the data as required by the relining material manufacture and applicable standards. The recorded data shall include but is not limited to the location of the project, relining material type, amount of product installed and conditions of the installation. A copy of the data report shall be provided to the code official prior to final approval.</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>717.8 Post-installation recorded video camera survey. The completed relined piping system shall be inspected internally by a recorded video camera survey after the system has been flushed and flow tested with water. The video survey shall be submitted to the the code official prior to finalization of the permit. The video survey shall be reviewed and evaluated to provide verification that no defects exist. Any defects identified shall be repaired and replaced in accordance with this code.</p> <p>717.9 Certification. A certification shall be provided in writing to the code official, from the permit holder, that the relining materials have been installed in accordance with the manufacturer's installation instructions, the applicable standards and this code.</p> <p>717.10 Approval. Upon verification of compliance with the requirements of Sections 717.1 through 717.9, the code official shall approve the installation.</p>					
P115-18 Part II	<p>Change existing definition for SECTION P3011 to:</p> <p style="text-align: center;">SECTION-P3011</p> <p style="text-align: center;"><u>REPLACEMENT-RELINING OF UNDERGROUND-BUILDING SEWERS BYPVC FOLD AND FORM METHODS</u>BUILDING DRAINS</p> <p>P3011.1 General. This section shall govern the replacement relining of existing building sewer piping by PVC Fold and Form methods, and building drainage piping.</p> <p>P3011.2 Applicability. The replacement relining of existing building sewer piping by PVC fold and form methods and building drainage piping shall be limited to gravity drainage piping 4 inches (102 mm) to 18 inches (457 mm). The replacement in diameter and larger. The relined piping shall be of the same nominal size as existing piping.</p> <p>P3011.3 Preinstallation inspection Pre-installation Requirements. The Prior to commencement of the relining installation, existing piping sections to be replaced-relined shall be descaled and cleaned. After the cleaning process has occurred and water has been flushed through the system, the piping shall be inspected internally by a recorded video camera survey. The survey shall include notations of the position of cleanouts and the depth of connections to existing piping.</p> <p>Add new definition for P3011 as follows:</p> <p>P3011.3.1 Pre-installation recorded video camera survey. The video survey shall include verification of the project address location. The video shall include notations of the cleanout and fitting locations, and the approximate depth of existing piping.</p>	X			Minimal	Provides installation and acceptance criteria when the application is encountered.

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>The video shall also include notations of the length of piping at intervals no greater than 25 feet.</p> <p>P3011.4 Permitting. Prior to issuing a permit for relining, the building official shall review and evaluate the pre-installation recorded video camera survey to determine whether the piping system is capable to be relined in accordance with the proposed lining system manufacturer's installation requirements and applicable referenced standards.</p> <p>P3011.5 Prohibited applications. Where review of the pre-installation recorded video camera survey reveals that piping systems are not installed correctly, or defects exist, relining shall not be permitted. The defective portions of piping shall be exposed and repaired with pipe and fittings in accordance with this code. Defects shall include, but are not limited to, backslope or insufficient slope, complete pipe wall deterioration or complete separations such as from tree root invasion or improper support.</p> <p>P3011.6 Relining materials. The relining materials shall be manufactured in compliance with applicable standards and certified as required in Section P2609. Fold-and-form pipe reline materials shall be manufactured in compliance with ASTM F1504 or ASTM F1871.</p> <p>P3011.7 Installation. The installation of relining materials shall be performed in accordance with the manufacturer's installation instructions, applicable referenced standards and this code.</p> <p>P3011.7.1 Material data report. The installer shall record the data as required by the relining material manufacture and applicable standards. The recorded data shall include but is not limited to the location of the project, relining material type, amount of product installed and conditions of the installation. A copy of the data report shall be provided to the building official prior to final approval.</p> <p>P3011.8 Post-installation recorded video camera survey. The completed relined piping system shall be inspected internally by a recorded video camera survey after the system has been flushed and flow tested with water. The video survey shall be submitted to the the code official prior to finalization of the permit. The video survey shall be reviewed and evaluated to provide verification that no defects exist. Any defects identified shall be repaired and replaced in accordance with this code.</p> <p>P3011.9 Certification. A certification shall be provided in writing to the building official, from the permit holder, that the relining materials have been installed in accordance with the</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>manufacturer's installation instructions, the applicable standards and this code.</p> <p>P3011.10 Approval. Upon verification of compliance with the requirements of Sections P3011.1 through P3011.9, the building official shall approve the installation.</p> <p>Delete existing definition for Pipe, Installation, Cleanouts, Post Installation inspection, and Pressure testing.</p>					
P116-18	<p>Add new definition for SECTION 717 as follows:</p> <p style="text-align: center;">SECTION 717</p> <p style="text-align: center;"><u>BUILDING SEWER AND SEWER SERVICE LATERAL REHABILITATION</u></p> <p>717.1 Building sewer and sewer service lateral rehabilitation. Any Cured-in-place rehabilitation of building sewer piping and sewer service lateral piping shall be in accordance with ASTM F2599. Any Cured-in-place rehabilitation of building sewer and sewer service lateral pipe and its connection to the main sewer pipe shall be in accordance with F2561. All cured-in-place rehabilitation of building sewer piping and sewer service laterals shall include the use of hydrophilic rings or gaskets meeting ASTM F3240 to assure water tightness and elimination of ground water penetration.</p>		X			Necessary addition for clarification
P117-18	<p>Change existing definition for 903.1 Roof extension to:</p> <p>903.1 Roof extension Vent terminal required. Open vent pipes that extend through a roof shall be terminated not less than [NUMBER] inches (mm) above the roof. Where a roof is to be used for assembly or as a promenade, observation deck, sunbathing deck or similar purposes, open vent pipes shall terminate not less than 7 feet (2134 mm) above the roof. The vent pipe shall terminate by extending to the outdoors through the roof or the side wall in accordance with one of the methods identified in Section 903.1.1 through 903.1.4.</p> <p>Add new definition for 903.1.1 Roof extension unprotected, 903.1.2 Roof used for recreational or assembly purposes, 903.1.3 Protected vent terminal, and 903.1.4 Sidewall vent terminal as follows:</p> <p>903.1.1 Roof extension unprotected. Open vent pipes that extend through a roof shall be terminated not less than [NUMBER] inches (mm) above the roof.</p> <p>903.1.2 Roof used for recreational or assembly purposes. Where a roof is to be used as a promenade, restaurant, bar, observation deck, sunbathing deck, or similar purposes, open vent pipes shall terminate not less than 7 feet (2134 mm) above the roof.</p> <p>903.1.3 Protected vent terminal. Where an open vent pipe terminates above a sloped roof and is covered by either a roof-</p>	X			Minimal	Provides options for vent termination

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>mounted panel (such as a solar collector or photovoltaic panel mounted over the vent opening) or a roof element (such as an architectural feature or a decorative shroud), the vent pipe shall terminate not less than 2 inches (51 mm) above the roof surface. Such roof elements shall be designed to prevent the adverse effects of snow accumulation and wind on the function of the vent. The placement of a panel over a vent pipe and the design of a roof element covering the vent pipe shall provide for an open area for the vent pipe to the outdoors that is not less than the area of the pipe, as calculated from the inside diameter of the pipe. Such vent terminals shall be protected by a method that prevents birds and rodents from entering or blocking the vent pipe opening.</u></p> <p>903.1.4 Sidewall vent terminal. <u>Vent terminals extending through the wall shall terminate not less than 10 feet (3048 mm) from the lot line and 10 feet (3048 mm) above the highest adjacent grade within 10 feet (3048 mm) horizontally of the vent terminal. Vent terminals shall not terminate under the overhang of a structure with soffit vents. Side wall vent terminals shall be protected to prevent birds or rodents from entering or blocking the vent opening.</u></p> <p>Delete existing definition for 903.6 Extension through the wall.</p>					
P118-18	<p>Change existing definition for 915.1 Type of fixtures to: 915.1 Type of fixtures. A combination waste and vent system shall not serve fixtures other than floor drains, sinks, lavatories and drinking fountains. Combination waste and vent systems shall not receive the discharge from a food waste disposer or clinical sink.</p>	X			Minimal	Clarification
P120-18	<p>Change existing definition for Fixture traps to: Fixture traps. Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.3.3. A fixture shall not be double trapped.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. This section shall not apply to fixtures with integral traps. 2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste 		X			Clarification

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>outlets are not more than 30 inches (762 mm) apart.</p> <p>3. Floor drains in multilevel parking structures that discharge to a building storm sewer shall not be required to be individually trapped. Where floor drains in multilevel parking structures are required to discharge to a combined building sewer system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.</p> <p>4. <u>Where a hydromechanical grease interceptor serves a food utensil, dishes, pots and pans sink, in accordance with the manufacturer's installation instructions. The branch drain serving the interceptor shall be provided with an emergency floor drain down stream of the interceptor connection, and the branch shall serve only the emergency floor drain and the interceptor. Where the interceptor serves combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the developed length of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm). The food utensil, dishes, pots and pans sink shall be required to connect directly with the interceptor.</u></p>					
P122-18	<p>Add new definition for 1002.4.1.5 Fixture drain connection for trap priming as follows:</p> <p><u>1002.4.1.5 Fixture drain connection for trap priming.</u> <u>A fixture drain from a lavatory or hand sink shall serve as a method of providing trap seal protection for an emergency floor drain, a trench drain, or a floor sink where such fixtures are located in the same room. A fixture drain from a drinking fountain shall serve as a method of providing trap seal protection for an emergency floor drain, a trench drain, or a floor sink where such fixtures are in the same room or in a room adjacent to the room having the drinking fountain. The fixture drain shall not be routed on or above the surface of the floor and shall connect to the floor drain, trench drain, or floor sink at a point that is below the flood level rim and above the inlet to the trap of the receiving fixture.</u></p> <p>Change existing definition for Trap seal protection to:</p>	X			Minimal	Method for providing trap seal protection that can lower the owner's overall maintenance cost and requires no special or certified product

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	Trap seal protection. Trap seals of emergency floor drain traps and trap seals subject to evaporation shall be protected by one of the methods in Sections 1002.4.1.1 through 1002.4.1.4 1002.4.1.5.					
P126-18	Change existing definition for 1102.6 Roof Drains to: 1102.6 Roof Drains. Roof drains shall conform to ASME A112.6.4 or ASME A112.3.1. <u>Roof drains, other than siphonic roof drains, shall be tested and rated in accordance with ASME A112.6.4 or ASPE/IAPMO Z1034.</u>			X	Minimal	Answers questions about roof drains and storm drain system piping requirements
P129-18	Change existing definition for 1106.2 Size of storm drain piping to: 1106.2 Size of storm drain piping. Vertical and horizontal storm drain piping shall be sized based on the flow rate through the roof drain. The flow rate, <u>as calculated in accordance with Section 1106.2.1, shall be checked against the roof drain manufacturer's published flow rate for the specific roof drain model and size to verify that the selected roof drain will handle the anticipated flow.</u> The flow rate in storm drain piping shall not exceed that specified in Table 1106.2. Add new definition for 1106.2.1 Rainfall rate conversion method as follows: 1106.2.1 Rainfall rate conversion method. The rainfall rate falling on a roof surface shall be converted to a gallons per minute flow rate in accordance with Equation 11-1. $GPM = R \cdot A \cdot 0.0104 \quad \text{(Equation 11-1)}$ where, R = Rainfall intensity in inches per hour A = Roof area in square feet		X			Assists design professionals and code enforcement in making sure that the storm drain piping is properly sized.
P131-18 Part I	Change existing definition for Scope to: Scope-General. The provisions of Chapter 13 shall govern the materials, design, construction and installation of systems for the collection, storage, treatment and distribution of nonpotable water. <u>For nonpotable rainwater systems, the provisions of CSA B805/ICC 805 shall be an alternative for regulating the materials, design, construction and installation of systems for rainwater collection, storage, treatment and distribution of nonpotable water.</u> The use and application of nonpotable water shall comply with laws, rules and ordinances applicable in the jurisdiction.		X			Provides for an option to the user.

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
P131-18 Part II	Change existing definition for P2912.1 General to: P2912.1 General. The provisions of this section shall govern the construction, installation, alteration, and repair of rainwater collection and conveyance systems for the collection, storage, treatment and distribution of rainwater for nonpotable applications, as permitted by. <u>For nonpotable rainwater systems, the provisions of CSA B805/ICC 805 shall be an alternative for regulating the materials, design, construction and installation of systems for rainwater collection, storage, treatment and distribution of nonpotable water.</u> The use and application of nonpotable water shall comply with laws, rules and ordinances applicable in the jurisdiction.		X			Provides for an option to the user.
P133-18 Part I	Change existing definition for SECTION 14 to: SECTION 14 <u>SUBSURFACE LANDSCAPE IRRIGATION GRAY WATER SOIL ABSORPTION SYSTEMS</u> Scope. The provisions of this chapter shall govern the materials, design, construction and installation of subsurface landscape irrigation graywater soil absorption systems connected to nonpotable water from on-site water reuse systems. Materials. Above-ground drain, waste and vent piping for subsurface landscape irrigation graywater soil absorption systems shall conform to one of the standards listed in Table 702.1. Subsurface landscape irrigation graywater soil absorption systems, underground building drainage and vent pipe shall conform to one of the standards listed in Table 702.2. Tests. Drain, waste and vent piping for subsurface landscape irrigation graywater soil absorption systems shall be tested in accordance with Section 312. Inspections. Subsurface landscape irrigation graywater soil absorption systems shall be inspected in accordance with Section 107. Disinfection. Disinfection shall not be required for on-site nonpotable water reuse for subsurface landscape irrigation graywater soil absorption systems. Coloring. On-site nonpotable water reuse for subsurface landscape irrigation graywater soil absorption systems shall not be required to be dyed. 1402.1 Sizing. The system shall be sized in accordance with the sum of the output of all water sources connected to the subsurface irrigation gray water soil absorption system. Where gray water collection piping is connected to subsurface landscape irrigation systems, gray water output shall be		X			Clarification

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		Decrease	None	Increase																															
Sub Code:																																			
	<p>calculated according to the gallons-per-day-per-occupant number based on the type of fixtures connected. The gray water discharge shall be calculated by the following equation:</p> <p>1402.3 Subsurface landscape irrigation graywater soil absorption site location. The surface grade of all soil absorption systems shall be located at a point lower than the surface grade of any water well or reservoir on the same or adjoining lot. Where this is not possible, the site shall be located so surface water drainage from the site is not directed toward a well or reservoir. The soil absorption system shall be located with a minimum horizontal distance between various elements as indicated in Table 1402.3. Private sewage disposal systems in compacted areas, such as parking lots and driveways, are prohibited. Surface water shall be diverted away from any soil absorption site on the same or neighboring lots.</p> <p style="text-align: center;">TABLE 1402.3 LOCATION OF SUBSURFACE IRRIGATION GRAYWATER SOIL ABSORPTION SYSTEM</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">ELEMENT</th> <th colspan="2">MINIMUM HORIZONTAL DISTANCE</th> </tr> <tr> <th>Storage tank (feet)</th> <th>Absorption field (feet)</th> </tr> </thead> <tbody> <tr> <td>Buildings</td> <td>5</td> <td>2</td> </tr> <tr> <td>Lot line adjoining private property</td> <td>5</td> <td>5</td> </tr> <tr> <td>Water wells</td> <td>50</td> <td>100</td> </tr> <tr> <td>Streams and lakes</td> <td>50</td> <td>50</td> </tr> <tr> <td>Seepage pits</td> <td>5</td> <td>5</td> </tr> <tr> <td>Septic tanks</td> <td>0</td> <td>5</td> </tr> <tr> <td>Water service</td> <td>5</td> <td>5</td> </tr> <tr> <td>Public water main</td> <td>10</td> <td>10</td> </tr> </tbody> </table> <p>For SI: 1 foot = 304.8 mm.</p> <p>1403.1 Installation. Absorption systems shall be installed in accordance with Sections 1403.1.1 through 1403.1.5 to provide landscape irrigation without surfacing of water.</p>	ELEMENT	MINIMUM HORIZONTAL DISTANCE		Storage tank (feet)	Absorption field (feet)	Buildings	5	2	Lot line adjoining private property	5	5	Water wells	50	100	Streams and lakes	50	50	Seepage pits	5	5	Septic tanks	0	5	Water service	5	5	Public water main	10	10					
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	Storage tank (feet)	Absorption field (feet)																																	
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Water service	5	5																																	
Public water main	10	10																																	
P133-18 Part II	<p>Change existing definition for SECTION P3009 to:</p> <p style="text-align: center;">SECTION P3009 SUBSURFACE LANDSCAPE IRRIGATION GRAY WATER SOIL ABSORPTION SYSTEMS</p> <p>P3009.1 Scope. The provisions of this section shall govern the materials, design, construction and installation of subsurface landscape irrigation gray water soil absorption systems connected to nonpotable water from on-site water reuse systems.</p>		X			Clarification																													

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE				
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	<p>P3009.2 Materials. Above-ground drain, waste and vent piping for subsurface landscape irrigation gray water soil absorption systems shall conform to one of the standards indicated in Table P3002.1(1). Subsurface landscape irrigation gray water soil absorption, underground building drainage and vent pipe shall conform to one of the standards indicated in Table P3002.1(2).</p> <p>P3009.3 Tests. Drain, waste and vent piping for subsurface landscape irrigation gray water soil absorption systems shall be tested in accordance with Section P2503.</p> <p>P3009.4 Inspections. Subsurface landscape irrigation gray water soil absorption systems shall be inspected in accordance with Section R109.</p> <p>P3009.5 Disinfection. Disinfection shall not be required for on-site nonpotable reuse water for subsurface landscape irrigation gray water soil absorption systems.</p> <p>P3009.6 Coloring. On-site nonpotable reuse water used for subsurface landscape irrigation gray water soil absorption systems shall not be required to be dyed.</p> <p>P3009.7 Sizing. The system shall be sized in accordance with the sum of the output of all water sources connected to the subsurface irrigation system gray water soil absorption system. Where gray-water collection piping is connected to subsurface landscape gray water soil absorption irrigation systems, gray-water output shall be calculated according to the gallons-per-day-per-occupant (liters per day per occupant) number based on the type of fixtures connected. The gray- water discharge shall be calculated by the following equation:</p> <p>P3009.9 Subsurface landscape irrigation gray water soil absorption system site location. The surface grade of soil absorption systems shall be located at a point lower than the surface grade of any water well or reservoir on the same or adjoining lot. Where this is not possible, the site shall be located so surface water drainage from the site is not directed toward a well or reservoir. The soil absorption system shall be located with a minimum horizontal distance between various elements as indicated in Table P3009.9. Private sewage disposal systems in compacted areas, such as parking lots and driveways, are prohibited. Surface water shall be diverted away from any soil absorption site on the same or neighboring lots.</p> <p style="text-align: center;">TABLE P3009.9 LOCATION OF SUBSURFACE IRRIGATION GRAY WATER SOIL ABSORPTION SYSTEM</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">ELEMENT</th> <th style="width: 50%;">MINIMUM HORIZONTAL DISTANCE</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> </tr> </tbody> </table>	ELEMENT	MINIMUM HORIZONTAL DISTANCE							
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	STORAGE TANK (feet)	IRRIGATION DISPOSAL ABSORPTION FIELD (feet)																															
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Water service	5	5																															
Public water main	10	10																															
ADM6-19	<p>Change existing definition for [A] 101.2 Scope to:</p> <p>2018 International Mechanical Code</p> <p>[A] 101.2 Scope. This code shall regulate the design, installation, maintenance, <i>alteration</i> and inspection of mechanical systems that are permanently installed and utilized to provide control of environmental conditions and related processes within buildings. This code shall also regulate those mechanical systems, system components, <i>equipment</i> and appliances specifically addressed herein. The installation of fuel gas distribution piping and <i>equipment</i>, fuel gas-fired appliances and fuel gas-fired <i>appliance</i> venting systems shall be regulated by the International Fuel Gas Code.</p> <p>Exception:</p> <p>Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height, shall comply with <u>this code</u> or the International Residential Code.</p> <p>2018 International Plumbing Code</p> <p>[A] 101.2 Scope. The provisions of this code shall apply to the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing systems within this jurisdiction. This code shall regulate nonflammable medical gas, inhalation anesthetic, vacuum piping, nonmedical oxygen systems and sanitary and condensate vacuum collection systems. The installation of fuel gas distribution piping and equipment, fuel-gas-fired water heaters and water heater venting systems shall be regulated by the</p>		X			Clarification																											

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>International Fuel Gas Code. Provisions in the appendices shall not apply unless specifically adopted.</p> <p>Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high above grade plane in height with a separate means of egress, and their accessory structures <u>not more than three stories above grade plane in height</u>, shall comply with <u>this code</u> or the International Residential Code.</p> <p>2018 International Existing Building Code [A] 101.2 Scope. The provisions of the this code shall apply to the <i>repair, alteration, change of occupancy, addition</i> to and relocation of <i>existing buildings</i>.</p> <p>Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress, and their accessory structures not more than three stories above grade plane in height, shall comply with this code or the International Residential Code.</p> <p>2018 International Fuel Gas Code [A] 101.2 Scope. This code shall apply to the installation of fuel-gas <i>piping</i> systems, fuel gas appliances, gaseous hydrogen systems and related accessories in accordance with Sections 101.2.1 through 101.2.5.</p> <p>Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high above grade plane in height with a separate means of egress, and their accessory structures <u>not more than three stories above grade plane in height</u>, shall comply with <u>this code</u> or the International Residential Code.</p>					
ADM9-19	<p>Change existing definition for [A] 101.3 Intent to:</p> <p>2018 International Building Code [A] 101.3 Intent-Purpose. The purpose of this code is to establish the minimum requirements to provide a reasonable level of safety, public health and general welfare through structural strength, <i>means of egress facilities</i>, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire, explosion and other hazards, and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.</p> <p>2018 International Fire Code</p>		X			Clarification

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>[A] 101.3 Intent-Purpose. The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide a reasonable level of safety to fire fighters and emergency responders during emergency operations.</p> <p>2018 International Existing Building Code</p> <p>[A] 101.3 Intent-Purpose. The intent purpose of this code is to provide flexibility to permit the use of alternative approaches to achieve compliance with minimum requirements to safeguard the public provide a reasonable level of safety, health, safety and general welfare insofar as they are affected by the <i>repair, alteration, change of occupancy, addition</i> and relocation of existing buildings.</p> <p>2018 International Plumbing Code</p> <p>101.3 Intent-Purpose. The purpose of this code is to establish minimum standards-requirements to provide a reasonable level of safety, health, property protection and public-general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of plumbing equipment and systems.</p> <p>2018 International Mechanical Code</p> <p>[A] 101.3 Intent-Purpose. The purpose of this code is to establish minimum standards-requirements to provide a reasonable level of safety, health, property protection and public-general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of mechanical equipment or systems.</p> <p>2018 International Private Sewage Disposal Code</p> <p>[A] 101.6 Intent-Purpose. The purpose of this code is to establish minimum standards-requirements to provide a reasonable level of safety health, property protection and public-general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of <i>private sewage disposal systems</i>.</p> <p>2018 International Fuel Gas Code</p> <p>[A] 101.4 Intent-Purpose. The purpose of this code is to establish minimum standards-requirements to provide a reasonable level of safety, health, property protection and public-general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of fuel gas equipment or systems.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2018 International Swimming Pool and Spa Code [A] 101.3 Intent-Purpose. The purpose of this code is to establish minimum standards-requirements to provide a reasonable level of safety and protection of health, <u>health, property protection and public general welfare</u> by regulating and controlling the design, construction, installation, quality of materials, location and maintenance or use of pools and spas.</p> <p>2018 International Property Maintenance Code [A] 101.3 Intent-Purpose. This code shall be construed to secure its expressed intent, which is to ensure public. The purpose of this code is to establish minimum requirements to provide a reasonable level of health, safety and general welfare insofar as they are affected by the continued <i>occupancy</i> and maintenance of structures and <i>premises</i>. Existing structures and <i>premises</i> that do not comply with these provisions shall be altered or repaired to provide a reasonable minimum level of health, <u>safety and safety general welfare</u> as required herein.</p> <p>2018 International Zoning Code [A] 101.2 Intent-Purpose. The purpose of this code is to safeguard the health, property and public establish minimum requirements to provide a reasonable level of health, safety, <u>property protection and</u> welfare by controlling the design, location, use or occupancy of all buildings and structures through the regulated and orderly development of land and land uses within this jurisdiction.</p> <p>2018 International Wildland-Urban Interface Code [A] 101.3 Objective-Purpose. The objective-purpose of this code is to establish minimum regulations consistent with nationally recognized good practice for the safeguarding of life and for property protection. Regulations in this code are intended to mitigate the risk to life and structures from intrusion of fire from wildland fire exposures and fire exposures from adjacent structures and to mitigate structure fires from spreading to wildland fuels. The extent of this regulation is intended to be tiered commensurate with the relative level of hazard present. The unrestricted use of property in <i>wildland-urban interface areas</i> is a potential threat to life and property from fire and resulting erosion. Safeguards to prevent the occurrence of fires and to provide adequate fire protection facilities to control the spread of fire in <i>wildland-urban interface areas</i> shall be in accordance with this code. This code shall supplement the jurisdiction’s building and fire codes, if such codes have been adopted, to provide for special</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>regulations to mitigate the fire- and life-safety hazards of the <i>wildland-urban interface areas</i>.</p> <p>[A] 101.4 Intent-Purpose.</p> <p>[A] 101.4.1 Building. To The purpose of this code is to provide an acceptable level of health, safety, and <u>general</u> welfare and to limit damage to property from events that are expected to impact buildings and structures. Accordingly, Part II of this code intends buildings and structures to provide for the following:</p>					
ADM16-19 Part I	<p>Change existing definition for SECTION 103 to:</p> <p>2018 International Building Code</p> <p>SECTION 103</p> <p>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE</p> <p>AGENCY</p> <p>[A] 103.1 Creation of enforcement agency. The Department of Building Safety [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the building official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The <i>building official</i> shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the building official shall have the authority to appoint a deputy building official, the other related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the building official. For the maintenance of existing properties, see the International Property Maintenance Code.</p> <p>2018 International Fire Code</p> <p>SECTION 103</p> <p>DEPARTMENT OF FIRE PREVENTION CODE COMPLIANCE</p> <p>AGENCY</p> <p>[A] 103.1 General-Creation of agency. The department of fire prevention is established within the jurisdiction under the direction of the fire code official. [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the fire code official. The function of the department agency shall be the implementation, administration and enforcement of the provisions of this code.</p> <p>[A] 103.2 Appointment. The <i>fire code official</i> shall be appointed by the chief appointing authority of the jurisdiction. ; and the fire code official shall not be removed from office except for cause</p>		X		Clarification	

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>and after full opportunity to be heard on specific and relevant charges by and before the appointing authority.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the fire code official shall have the authority to appoint a deputy fire code official, other related technical officers, inspectors and other employees. <u>Such employees shall have powers as delegated by the fire code official.</u></p> <p>[A] 103.4-104.7 Liability. The <i>fire code official</i>, member of the board of appeals, officer or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.7.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The fire code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code; and any officer of the department of fire prevention, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.</p> <p>2018 International Plumbing Code SECTION 103 <u>DEPARTMENT OF PLUMBING INSPECTION CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>103.1 General. <u>Creation of agency.</u> The department of plumbing inspection-[INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p> <p>103.4 104.8 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.</p> <p>103.4.1 104.8.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Mechanical Code SECTION 103 <u>DEPARTMENT OF MECHANICAL INSPECTION-CODE COMPLIANCE AGENCY</u></p> <p>[A] 103.1 General. Creation of agency. The department of mechanical inspection-[INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p> <p>[A] 103.4 104.8 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.8.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Fuel Gas Code SECTION 103 <u>DEPARTMENT OF INSPECTION-CODE COMPLIANCE AGENCY</u></p> <p>[A] 103.1 General- Creation of agency. The Department of Inspection-<u>[INSERT NAME OF DEPARTMENT]</u> is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p> <p>[A] 103.4-104.8 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.8.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Existing Building Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>[A] 103.1 Creation of enforcement agency. The Department of Building Safety [INSERT NAME OF DEPARTMENT] is hereby created, and the official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The <i>code official</i> shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, the other related technical officers, inspectors, plan examiners, and other employees. Such employees shall have powers as delegated by the code official.</p> <p>2018 International Swimming Pool and Spa Code SECTION 103 <u>DEPARTMENT OF BUILDING SAFETY CODE COMPLIANCE</u> <u>AGENCY</u></p> <p>[A] 103.1 Creation of enforcement agency. The department of building safety [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of the this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, the other related technical officers, inspectors, plans examiners and other employees. Such employees shall have powers as delegated by the code official.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 103.4-104.8 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.8.1 Legal defenses. Any suit or criminal complaint instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Property Maintenance Code SECTION 103 DEPARTMENT OF PROPERTY MAINTENANCE INSPECTION CODE COMPLIANCE AGENCY</p> <p>[A] 103.1 General-<u>Creation of agency.</u> The department of property maintenance inspection <u>[INSERT NAME OF DEPARTMENT]</u> is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The <i>code official</i> shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy (s) <u>code official, other related technical officers, inspectors and other employees.</u> Such employees shall have powers as delegated by the code official.</p> <p>[A] 103.4-104.7 Liability. The <i>code official</i>, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction, in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>property as a result of an act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4.1-104.7.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Private Sewage Disposal Code SECTION 103 DEPARTMENT OF PRIVATE SEWAGE DISPOSAL INSPECTION CODE COMPLIANCE AGENCY</p> <p>[A] 103.1 General- Creation of agency. The Department of Private Sewage Disposal Inspection [INSERT NAME OF DEPARTMENT] is hereby created and the executive official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u></p> <p>[A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction.</p> <p>[A] 103.3 Deputies. In accordance with the prescribed procedures of the <u>this</u> jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the code official.</p> <p>[A] 103.4-104.7 Liability. The code official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered civilly or criminally liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties.</p> <p>[A] 103.4-104.7.1 Legal defense. Any suit or criminal complaint instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representatives of the jurisdiction until the final termination of the proceedings. The code official or any</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>subordinate shall not be liable for costs in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.</p> <p>2018 International Wildland-Urban Interface Code SECTION 103 <u>ENFORCEMENT CODE COMPLIANCE AGENCY</u> [A] 103.1 Creation of enforcement agency. The department of [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the code official. <u>The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.</u> [A] 103.2 Appointment. The code official shall be appointed by the chief appointing authority of the jurisdiction. [A] 103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy(s) <u>deputy code official, other related technical officers, inspectors and other employees.</u> Such employees shall have powers as delegated by the code official.</p>					
ADM27-19	<p>Add new definition for SECTION 107 as follows:</p> <p>2018 International Mechanical Code SECTION 107 <u>FEES</u> 107.2 Schedule of permit fees. Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority. 107.3 Permit valuations. The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as mechanical equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official. 107.5 Related fees. The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law. 107.6 Refunds. The code official is authorized to establish a refund policy.</p> <p>2018 International Plumbing Code</p>		X			Helps correlate all the I-Codes together and makes it easier to understand where the requirements are located.

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p style="text-align: center;"><u>SECTION 107</u> <u>FEES</u></p> <p><u>107.2 Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p><u>107.5 Related fees.</u> The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p><u>107.6 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>2018 International Property Maintenance Code</p> <p style="text-align: center;"><u>SECTION 104</u> <u>FEES</u></p> <p><u>104.2 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>2018 International Fuel Gas Code</p> <p style="text-align: center;"><u>SECTION 107</u> <u>FEES</u></p> <p><u>107.2 Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p><u>107.3 Permit valuations.</u> The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as plumbing equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official.</p> <p><u>107.5 Related fees.</u> The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p><u>107.6 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>2018 International Swimming Pool and Spa Code</p> <p style="text-align: center;"><u>SECTION 106</u> <u>FEES</u></p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>106.2 Schedule of permit fees.</u> Where work requires a permit, a fee for each permit shall be paid as required, in accordance with the schedule as established by the applicable governing authority.</p> <p><u>106.3 Permit valuations.</u> The applicant for a permit shall provide an estimated permit value at time of application. Permit valuations shall include total value of work, including materials and labor, for which the permit is being issued, such as mechanical equipment and permanent systems. If, in the opinion of the code official, the valuation is underestimated on the application, the permit shall be denied, unless the applicant can show detailed estimates to meet the approval of the code official. Final building permit valuation shall be set by the code official.</p> <p><u>106.5 Related fees.</u> The payment of the fee for the construction, alteration, removal or demolition for work done in connection to or concurrently with the work authorized by a permit shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law.</p> <p><u>106.6 Refunds.</u> The code official is authorized to establish a refund policy.</p> <p>Change existing definitions for SECTION 107 to:</p> <p>2018 International Mechanical Code <u>[A] 106.5-107.1 Fees- Payment of fees.</u> A permit shall not be issued valid until the fees prescribed in Section 106.5.2 by law have been paid., nor shall an amendment to a permit shall not be released until the additional fee, if any, due to an increase of the mechanical system, has been paid. <u>[A] 106.5.1-107.4 Work commencing before permit issuance.</u> Any person who commences any work on a mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit fee a fee established by the code official that shall be in addition to the required permit fees.</p> <p>2018 International Plumbing Code <u>106.6-107.1 Fees- Payment of fees.</u> A permit shall not be issued valid until the fees prescribed in Section 106.6.2 by law have been paid., and an amendment to a permit shall not be released until the additional fee, if any, due to an increase of the plumbing systems, has been paid. <u>106.6.1-107.4 Work commencing before permit issuance.</u> Any person who commences any work on a plumbing-mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit a fee established by the code official that shall be in addition to the required permit fees.</p> <p>2018 International Property Maintenance Code</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 103.5-104.1 Fees. The fees for activities and services performed by the department in carrying out its responsibilities under this code shall be as indicated in the following schedule established by the applicable governing authority. [JURISDICTION TO INSERT APPROPRIATE SCHEDULE.]</p> <p>2018 International Fuel Gas Code</p> <p>[A] 106.6-107.1 Fees- Payment of fees. A permit shall not be issued valid until the fees prescribed in Section 106.6.2 by law have been paid, nor shall an amendment to a permit shall not be released until the additional fee, if any, due to an increase of the installation, has been paid.</p> <p>[A] 106.6.1-107.4 Work commencing before permit issuance. Any person who commences any work on an installation a mechanical system before obtaining the necessary permits shall be subject to 100 percent of the usual permit fee a fee established by the code official that shall be in addition to the required permit fees.</p> <p>2018 International Swimming Pool and Spa Code</p> <p>[A] 105.6-106.1 Fees- Payment of fees. A permit shall not be valid until the fees prescribed by law have been paid. An amendment to a permit shall not be released until the additional fee, if any, has been paid.</p> <p>[A] 105.6.1-106.4 Work commencing before permit issuance. Any person who commences any work on a mechanical system before obtaining the necessary permits shall be subject to a fee as indicated in the adopted fee schedule and would established by the code official that shall be in addition to the required permit fees.</p> <p>Delete existing definitions for [A] 106.5.2 Fee schedule, [A] 106.5.3 Fee refunds, 106.6.2 Fee schedule, 106.6.3 Fee refunds, [A] 106.6.2 Fee schedule, [A] 106.6.3 Fee refunds, [A] 105.6.2 Fee schedule, and [A] 105.6.3 Fee refunds.</p>					
ADM28-19	<p>Change existing definitions for SECTION 107 to:</p> <p>2018 International Building Code</p> <p style="text-align: center;">SECTION 107</p> <p style="text-align: center;"><u>SUBMITTAL CONSTRUCTION DOCUMENTS</u></p> <p>2018 International Fire Code</p> <p style="text-align: center;">SECTION 106</p> <p style="text-align: center;"><u>CONSTRUCTION DOCUMENTS</u></p> <p>[A] 105.4.1-106.1 Submittals. Construction documents and supporting data shall be submitted in two or more sets with each application for a permit and in such form and detail as required by the fire code official. The construction documents shall be prepared by a registered design professional where</p>		X			Provides consistency.

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>required by the statutes of the jurisdiction in which the project is to be constructed.</p> <p>Exception: The <i>fire code official</i> is authorized to waive the submission of <i>construction documents</i> and supporting data not required to be prepared by a registered design professional if it is found that the nature of the work applied for is such that review of <i>construction documents</i> is not necessary to obtain compliance with this code.</p> <p>[A] 105.4.1.1 106.2 Examination of documents. The <i>fire code official</i> shall examine or cause to be examined the accompanying <i>construction documents</i> and shall ascertain by such examinations whether the work indicated and described is in accordance with the requirements of this code.</p> <p>[A] 105.4.2 106.2.1 Information on construction documents. <i>Construction documents</i> shall be drawn to scale on suitable material. Electronic media documents are allowed to be submitted where <i>approved</i> by the <i>fire code official</i>. <i>Construction documents</i> shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and relevant laws, ordinances, rules and regulations as determined by the <i>fire code official</i>.</p> <p>[A] 105.4.2.1 106.2.2 Fire protection system shop drawings. Shop drawings for the fire protection system(s) shall be submitted to indicate compliance with this code and the <i>construction documents</i>, and shall be <i>approved</i> prior to the start of installation. Shop drawings shall contain all information as required by the referenced installation standards in Chapter 9.</p> <p>[A] 105.4.3 106.2.3 Applicant responsibility. It shall be the responsibility of the applicant to ensure that the <i>construction documents</i> include all of the fire protection requirements and the shop drawings are complete and in compliance with the applicable codes and standards.</p> <p>[A] 105.4.4 106.2.4 Approved documents. <i>Construction documents approved</i> by the <i>fire code official</i> are approved with the intent that such <i>construction documents</i> comply in all respects with this code. Review and approval by the <i>fire code official</i> shall not relieve the applicant of the responsibility of compliance with this code.</p> <p>[A] 105.4.4.1 106.2.4.1 Phased approval. The <i>fire code official</i> is authorized to issue a permit for the construction of part of a structure, system or operation before the <i>construction documents</i> for the whole structure, system or operation have been submitted, provided that adequate information and detailed</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>statements have been filed complying with pertinent requirements of this code. The holder of such permit for parts of a structure, system or operation shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure, system or operation will be granted.</p> <p>[A] 105.4.5 106.3 Amended construction documents. Work shall be installed in accordance with the <i>approved construction documents</i>, and any changes made during construction that are not in compliance with the <i>approved construction documents</i> shall be resubmitted for approval as an amended set of <i>construction documents</i>.</p> <p>[A] 105.4.6 106.4 Retention of construction documents. One set of <i>construction documents</i> shall be retained by the <i>fire code official</i> for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p style="text-align: center;">SECTION 107 CONSTRUCTION DOCUMENTS</p> <p>106.3.1 107.1 Construction documents. Construction documents, engineering calculations, diagrams and other such data shall be submitted in two or more sets with each application for a permit. The code official shall require construction documents, computations and specifications to be prepared and designed by a registered design professional where required by state law. Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. Construction documents for buildings more than two stories in height shall indicate where penetrations will be made for pipes, fittings and components and shall indicate the materials and methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception: The code official shall have the authority to waive the submission of construction documents, calculations or other data if the nature of the work applied for is such that reviewing of construction documents is not necessary to determine compliance with this code.</p> <p>106.5.6 107.2 Retention of construction documents. One set of <i>approved construction documents</i> shall be retained by the code official for a period of not less than 180 days from date of</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>completion of the permitted work, or as required by state or local laws. One set of <i>approved</i> construction documents shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>2018 International Mechanical Code</p> <p>SECTION 107</p> <p>CONSTRUCTION DOCUMENTS</p> <p>[A] 106.3.1-107.1 Construction documents. <i>Construction documents</i>, engineering calculations, diagrams and other data shall be submitted in two or more sets with each application for a permit. The code official shall require <i>construction documents</i>, computations and specifications to be prepared and designed by a <i>registered design professional</i> where required by state law. Where special conditions exist, the code official is authorized to require additional <i>construction documents</i> to be prepared by a <i>registered design professional</i>. <i>Construction documents</i> shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. <i>Construction documents</i> for buildings more than two stories in height shall indicate where penetrations will be made for mechanical systems, and the materials and methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception: The code official shall have the authority to waive the submission of <i>construction documents</i>, calculations or other data if the nature of the work applied for is such that reviewing of <i>construction documents</i> is not necessary to determine compliance with this code.</p> <p>[A] 106.4.6-107.2 Retention of construction documents. One set of <i>approved construction documents</i> shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall be returned to the applicant, and said set shall be kept on the site of the building or job at all times during which the work authorized thereby is in progress.</p> <p>2018 International Fuel Gas Code</p> <p>SECTION 107</p> <p>CONSTRUCTION DOCUMENTS</p> <p>[A] 106.3.1-107.1 Construction documents. <i>Construction documents</i>, engineering calculations, diagrams and other data</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>shall be submitted in two or more sets with each application for a permit. The code official shall require <i>construction documents</i>, computations and specifications to be prepared and designed by a registered design professional where required by state law. <i>Construction documents</i> shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code. <i>Construction documents</i> for buildings more than two stories in height shall indicate where penetrations will be made for installations and shall indicate the materials and methods for maintaining required structural safety, fire-resistance rating and fireblocking.</p> <p>Exception: The code official shall have the authority to waive the submission of <i>construction documents</i>, calculations or other data if the nature of the work applied for is such that reviewing of <i>construction documents</i> is not necessary to determine compliance with this code.</p> <p>[A] 106.5.6-107.2 Retention of construction documents. One set of <i>approved construction documents</i> shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>2018 International Swimming Pool and Spa Code</p> <p style="text-align: center;">SECTION 106</p> <p style="text-align: center;">CONSTRUCTION DOCUMENTS</p> <p>[A] 105.3-106.1 Construction documents. Construction documents, engineering calculations, diagrams and other such data shall be submitted in two or more sets with each application for a permit. The code official shall require construction documents, computations and specifications to be prepared and designed by a registered design professional where required by state law. Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code.</p> <p>[A] 105.5.6-106.2 Retention of construction documents. One set of <i>approved construction documents</i> shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of <i>approved construction documents</i> shall</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>2018 International Private Sewage Disposal Code</p> <p style="text-align: center;">SECTION 107</p> <p style="text-align: center;">CONSTRUCTION DOCUMENTS</p> <p>[A] 106.2.1-107.1 Construction documents. An application for a permit shall be accompanied by not less than two copies of construction documents drawn to scale, with sufficient clarity and detail dimensions showing the nature and character of the work to be performed. Specifications shall include pumps and controls, dose volume, elevation differences (vertical lift), pipe friction loss, pump performance curve, pump model and pump manufacturer. The code official is permitted to waive the requirements for filing construction documents where the work involved is of a minor nature. Where the quality of the materials is essential for conformity to this code, specific information shall be given to establish such quality, and this code shall not be cited, or the term “legal” or its equivalent used as a substitute for specific information.</p> <p>[A] 106.3.6-107.2 Retention of construction documents. One set of approved construction documents shall be retained by the code official for a period of not less than 180 days from date of completion of the permitted work, or as required by state or local laws. One set of approved construction documents shall be returned to the applicant, and said set shall be kept on the site of the building or work at all times during which the work authorized thereby is in progress.</p> <p>2018 International Wildland-Urban Interface Code</p> <p style="text-align: center;">SECTION 108</p> <p style="text-align: center;">PLANS AND SPECIFICATIONS-CONSTRUCTION DOCUMENTS</p> <p>Delete existing definition for [A] 105.4 Construction documents.</p>					
ADM31-19 Part I	<p>Add new definition for SECTION 108 as follows:</p> <p>2018 International Plumbing Code</p> <p style="text-align: center;">SECTION 108</p> <p style="text-align: center;">NOTICE OF APPROVAL</p> <p>2018 International Mechanical Code</p> <p style="text-align: center;">SECTION 108</p> <p style="text-align: center;">NOTICE OF APPROVAL</p> <p>2018 International Fuel Gas Code</p> <p style="text-align: center;">SECTION 108</p> <p style="text-align: center;">NOTICE OF APPROVAL</p>		X			Provides consistency

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2018 International Swimming Pool and Spa Code <u>SECTION 108</u> <u>NOTICE OF APPROVAL</u></p> <p>2018 International Private Sewage Disposal Code <u>SECTION 108</u> <u>NOTICE OF APPROVAL</u></p> <p>Change existing definitions for SECTION 108 to:</p> <p>2018 International Plumbing Code 107.5.1-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. 107.5.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>2018 International Mechanical Code [A] 107.4.1-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. [A] 107.4.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>2018 International Fuel Gas Code</p> <p>[A] 107.4.1-108.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official. [A] 107.4.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of incorrect information supplied or where it is determined that the building or structure, premise, or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>2018 International Swimming Pool and Spa Code</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>[A] 106.17-107.1 Approval. After the prescribed tests and inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 106.17.1-107.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, or on the basis of the incorrect information supplied, or where it is determined that the building or structure, premise, system or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p> <p>2018 International Private Sewage Disposal Code</p> <p>[A] 107.7-108.1 Approval. After the prescribed inspections indicate that the work complies in all respects with this code, a notice of approval shall be issued by the code official.</p> <p>[A] 107.7.1-108.2 Revocation. The code official is authorized to, in writing, suspend or revoke a notice of approval issued under the provisions of this code wherever the notice is issued in error, on the basis of incorrect information supplied, or where it is determined that the building or structure, premise or portion thereof is in violation of any ordinance or regulation or any of the provisions of this code.</p>					
ADM40-19 Part I	<p>Change existing definitions for SECTION 113 to:</p> <p>2018 International Building Code</p> <p style="text-align: center;">SECTION 113</p> <p style="text-align: center;"><u>BOARD MEANS OF APPEALS</u></p> <p>[A] 113.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business <u>and shall render all decisions and findings in writing to the appellant with a duplicate copy to the building official.</u></p> <p>[A] 113.2 Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an <u>equally good equivalent</u> or better form of construction is proposed. The board shall not have authority to waive requirements of this code or <u>interpret the administration of this code.</u></p> <p>[A] 113.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass</p>		X			Clarification

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>on matters pertaining to building construction and are not employees of the jurisdiction.</p> <p>2018 International Existing Building Code SECTION 112 <u>BOARD MEANS OF APPEALS</u></p> <p>[A] 112.1 General. In order to hear and decide appeals of orders, decisions , or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the <u>applicable governing body authority</u> and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business <u>and shall render all decisions and findings in writing to the appellant with a duplicate copy to the building official.</u></p> <p>[A] 112.2 Limitations on authority. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply , or an <u>equally good equivalent</u> or better form of construction is proposed. The board shall not have authority to waive requirements of this code or interpret the <u>administration of this code.</u></p> <p>[A] 112.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p> <p>2018 International Fire Code SECTION 109 <u>BOARD MEANS OF APPEALS</u></p> <p>[A] 109.1 Board of appeals established. In order to hear and decide appeals of orders, decisions or determinations made by the fire code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the <u>applicable governing body authority</u> and shall hold office at its pleasure. The fire code official shall be an ex-officio member of said board but shall not have a vote on any matter before the board. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the fire code official.</p> <p>[A] 109.2 Limitations on authority. An application for appeal shall be based on a claim that the <u>true</u> intent of this code or the rules legally adopted hereunder <u>thereunder</u> have been incorrectly interpreted, the provisions of this code do not fully</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>apply, or an equivalent method of protection or safety or better form of construction is proposed. The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>[A] 109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training to pass on matters pertaining to hazards of fire, explosions, hazardous conditions or <i>fire protection systems</i>, and are not employees of the jurisdiction.</p> <p>2018 International Wildland-Urban Interface Code SECTION 106 MEANS OF APPEALS</p> <p>[A] 106.1 General. To determine the suitability of alternative materials and methods and to provide for reasonable interpretations of the provisions. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby is created a board of appeals consisting of five members who are qualified by experience and training to pass judgment on pertinent matters. The code official, building official and fire chief shall be ex officio members, and the code official shall act as secretary of the board. The appeals. The board of appeals shall be appointed by the legislative body applicable governing authority and shall hold office at their discretion, its pleasure. The board shall adopt reasonable rules and regulations of procedure for conducting its investigations business and shall render all decisions and findings in writing to the code official, appellant with a duplicate copy to the applicant code official.</p> <p>[A] 106.2 Limitations of authority. The board of appeals shall not have authority relative to interpretation of the administrative provisions of this code and An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equivalent or better form of construction is proposed. The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>106.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>2018 International Plumbing Code SECTION 109 MEANS OF APPEAL-APPEALS</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>109.1<u>109.2 Application for appeal- Limitations on authority.</u> Any person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply , or an <u>equally good equivalent</u> or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. <u>board shall not have authority to waive requirements of this code or interpret the administration of this code.</u></p> <p><u>109.3 Qualifications.</u> The board of appeals shall consist of <u>members who are qualified by experience and training and are not employees of the jurisdiction.</u></p> <p><u>109.4 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 110 BOARD OF APPEALS</p> <p>109.2<u>110.1 Membership of board.</u> The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>2018 International Mechanical Code</p> <p style="text-align: center;">SECTION 109 MEANS OF APPEAL-APPEALS</p> <p>[A] 109.1<u>109.2 Application for appeal- Limitations on authority.</u> A person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply , or an <u>equally good equivalent</u> or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. <u>board shall not have authority to waive requirements of this code or interpret the administration of this code.</u></p> <p><u>109.4 Administration</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 110 BOARD OF APPEALS</p> <p>[A] 109.2<u>110.1 Membership of board.</u> The board of appeals shall consist of five members appointed by the chief appointing</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years; and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>2018 International Fuel Gas Code SECTION 109 (IFGC) MEANS OF APPEAL</p> <p>109.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>[A] 109.1109.2 Application for appeal. Limitations on authority. A person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>109.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 110 BOARD OF APPEALS</p> <p>[A] 109.2-110.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>2018 International Swimming Pool and Spa Code SECTION 108 MEANS OF APPEAL</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>108.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>[A] 108.1-108.2 Application for appeal. Limitations on authority. Any person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted there under thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>108.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>108.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 109 BOARD OF APPEALS</p> <p>[A] 108.2-109.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>2018 International Property Maintenance Code SECTION 111 MEANS OF APPEAL</p> <p>111.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>decisions and findings in writing to the appellant with a duplicate copy to the code official.</u></p> <p>[A] 111.1111.2 Application for appeal. Limitations on authority. Any person directly affected by a decision of the code official or a notice or order issued under this code shall have the right to appeal to the board of appeals, provided that a written application for appeal is filed within 20 days after the day the decision, notice or order was served. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of this code do not fully apply, or the or an equivalent or better form of construction is proposed. The board shall not have authority to waive requirements of this code are adequately satisfied by other means. or interpret the administration of this code.</p> <p>111.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>111.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 111.8111.5 Stays of enforcement. Appeals of notice and orders (other than <i>Imminent Danger</i> notices) shall stay the enforcement of the notice and order until the appeal is heard by the appeals board.</p> <p style="text-align: center;">SECTION 112 BOARD OF APPEALS</p> <p>[A] 111.2112.1 Membership of board. The board of appeals shall consist of not less than three members who are qualified by experience and training to pass on matters pertaining to property maintenance and who are not employees of the jurisdiction. The <i>code official</i> shall be an ex-officio member but shall not vote on any matter before the board. The board shall be appointed by the chief appointing authority and shall serve staggered and overlapping terms.</p> <p style="text-align: center;">2018 International Private Sewage Disposal Code SECTION 109 MEANS OF APPEAL</p> <p>109.1 General. In order to hear and decide appeals of orders, <u>decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created</u> a board of appeals. The board of appeals shall be <u>appointed by the applicable governing authority and shall hold office at its pleasure.</u> The board shall adopt rules of procedure for</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</p> <p>[A] 109.1-109.2 Application for appeal. Limitations on authority. Any person shall have the right to appeal a decision of the code official to the board of appeals. An application for appeal shall be based on a claim that the true intent of this code or the rules legally adopted thereunder has have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good equivalent or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served. board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>109.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>109.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p style="text-align: center;">SECTION 110 BOARD OF APPEALS</p> <p>[A] 109.2-110.1 Membership of board. The board of appeals shall consist of five members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new member shall serve for 5 years or until a successor has been appointed.</p> <p>Add new definition for SECTION 113 as follows:</p> <p>2018 International Building Code</p> <p>113.4 Administration. The building official shall take immediate action in accordance with the decision of the board.</p> <p>2018 International Existing Building Code</p> <p>113.4 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>2018 International Fire Code</p> <p>109.4 Administration. The fire code official shall take immediate action in accordance with the decision of the board.</p> <p>2018 International Wildland-Urban Interface Code</p> <p>106.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</p> <p>2018 International Plumbing Code</p> <p>109.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</u></p> <p>2018 International Mechanical Code</p> <p>109.1 General. <u>In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals. The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.</u></p> <p>109.3 Qualifications. <u>The board of appeals shall consist of members who are qualified by experience and training and are not employees of the jurisdiction.</u></p> <p>Delete existing definition for [A] 109.1.1 Limitation of authority.</p>					
ADM41-19 Part I	<p>Change existing definitions for SECTION 115 to:</p> <p>2018 International Building Code</p> <p>SECTION 115</p> <p>STOP WORK ORDER</p> <p>[A] 115.1 Authority. Where the <i>building official</i> finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or <u>in a dangerous or unsafe manner</u>, the <i>building official</i> is authorized to issue a stop work order.</p> <p>[A] 115.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, the owner's authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted is authorized to resume.</p> <p>115.3 Emergencies. Where an emergency exists, the <i>building official</i> shall not be required to give a <u>written notice prior to stopping the work.</u></p> <p>[A] 115.3 115.4 Unlawful continuance-Failure to comply. Any person who shall continue any work after having been served</p>		X			Standardizes the language and requirements for a stop work order throughout all the Codes

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law. <u>penalties as prescribed by law.</u> fines established by the authority having jurisdiction.</p> <p>2018 International Fire Code SECTION 112 STOP WORK ORDER</p> <p>[A] 112.1 Order-Authority. Where the <i>fire code official</i> finds any work regulated by this code being performed in a manner contrary to the provisions of this code, or in a dangerous or unsafe manner, the <i>fire code official</i> is authorized to issue a stop work order.</p> <p>[A] 112.2 Issuance. AThe stop work order shall be in writing and shall be given to the owner of the property, or to the owner's authorized agent, or to the person doing performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order, and the conditions under which the cited work is authorized to resume.</p> <p>[A] 112.3 Emergencies. Where an emergency exists, the fire code official shall not be required to give a written notice prior to stopping the work.</p> <p>[A] 112.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars. <u>subject to fines established by the authority having jurisdiction.</u></p> <p>2018 International Plumbing Code SECTION 108 VIOLATIONS</p> <p>2018 International Mechanical Code SECTION 108 VIOLATIONS</p> <p>2018 International Fuel Gas Code SECTION 108 (IFGC) VIOLATIONS</p> <p>2018 International Existing Building Code SECTION 114 STOP WORK ORDER</p> <p>[A] 114.1 Authority. Where the <i>code official</i> finds any work regulated by this code being performed in a manner contrary to</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>the provisions of this code or in a <i>dangerous</i> or <i>unsafe</i> manner, the <i>code official</i> is authorized to issue a stop work order.</p> <p>[A] 114.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, the owner’s authorized agent or to the person doing performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted is authorized to resume.</p> <p>[A] 114.3-114.4 Unlawful continuance. Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to penalties as prescribed by law. fines established by the authority having jurisdiction.</p> <p>2018 International Swimming Pool and Spa Code SECTION 107 VIOLATIONS</p> <p>2018 International Property Maintenance Code SECTION 112 STOP WORK ORDER</p> <p>[A] 112.1 Authority. Whenever <u>Where</u> the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</p> <p>[A] 112.2 Issuance. A <u>The</u> stop work order shall be in writing and shall be given to the owner of the property, to the owner’s authorized agent, or to the person doing performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</p> <p>[A] 112.3 Emergencies. Where an emergency exists, the <i>code official</i> shall not be required to give a written notice prior to stopping the work.</p> <p>[A] 112.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars. <u>subject to fines established by the authority having jurisdiction.</u></p> <p>2018 International Private Sewage Disposal Code SECTION 108</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p style="text-align: center;">VIOLATIONS</p> <p>2018 International Wildland-Urban Interface Code</p> <p style="text-align: center;">SECTION 114</p> <p style="text-align: center;">STOP WORK ORDER</p> <p>[A] 114.1 Authority. Where the code official finds any work regulated by this code being performed in a manner either contrary to the provisions of this code or <u>in a dangerous or unsafe manner</u>, the code official is authorized to issue a stop work order.</p> <p>[A] 114.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property involved, to the owner's authorized agent or to the person doing performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work will be permitted <u>is authorized</u> to resume.</p> <p>[A] 114.3 Emergencies. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p> <p>[A] 114.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars. <u>subject to fines established by the authority having jurisdiction.</u></p> <p>Add new definition for SECTION 109 as follows:</p> <p>2018 International Plumbing Code</p> <p style="text-align: center;">SECTION 109</p> <p style="text-align: center;">STOP WORK ORDER</p> <p><u>109.1 Authority.</u> Where the code official finds any work regulated by this code being performed in a manner <u>contrary to the provisions of this code or in a dangerous or unsafe manner</u>, the code official is <u>authorized to issue a stop work order.</u></p> <p><u>109.2 Issuance.</u> The stop work order shall be in writing and shall <u>be given to the owner of the property, the owner's authorized agent or the person performing the work.</u> Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is <u>authorized to resume.</u></p> <p><u>109.3 Emergencies.</u> Where an emergency exists, the code official shall not be required to give a written <u>notice prior to stopping the work.</u></p> <p><u>109.4 Failure to comply.</u> Any person who shall continue any work after having been served with a stop <u>work order, except such</u></p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</u></p> <p>2018 International Mechanical Code</p> <p style="text-align: center;">SECTION 109</p> <p style="text-align: center;">STOP WORK ORDER</p> <p>109.1 Authority. <u>Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</u></p> <p>109.2 Issuance. <u>The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</u></p> <p>109.3 Emergencies. <u>Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</u></p> <p>109.4 Failure to comply. <u>Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</u></p> <p>2018 International Fuel Gas Code</p> <p style="text-align: center;">SECTION 109</p> <p style="text-align: center;">STOP WORK ORDER</p> <p>109.1 Authority. <u>Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</u></p> <p>109.2 Issuance. <u>The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</u></p> <p>109.3 Emergencies. <u>Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</u></p> <p>109.4 Failure to comply. <u>Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation</u></p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</p> <p>2018 International Existing Building Code 114.3 Emergencies. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p> <p>2018 International Swimming Pool and Spa Code SECTION 108 STOP WORK ORDER</p> <p>108.1 Authority. Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</p> <p>108.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</p> <p>108.3 Emergencies. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p> <p>108.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</p> <p>2018 International Private Sewage Disposal Code SECTION 109 STOP WORK ORDER</p> <p>109.1 Authority. Where the code official finds any work regulated by this code being performed in a manner contrary to the provisions of this code or in a dangerous or unsafe manner, the code official is authorized to issue a stop work order.</p> <p>109.2 Issuance. The stop work order shall be in writing and shall be given to the owner of the property, the owner’s authorized agent or the person performing the work. Upon issuance of a stop work order, the cited work shall immediately cease. The stop work order shall state the reason for the order and the conditions under which the cited work is authorized to resume.</p> <p>109.3 Emergencies. Where an emergency exists, the code official shall not be required to give a written notice prior to stopping the work.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>109.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be subject to fines established by the authority having jurisdiction.</p> <p>Delete existing definition for 108.5 Stop work orders, [A] 108.5 Stop work orders, [A] 108.5 Stop work orders, [A] 107.5 Stop work orders, and [A] 108.5 Stop work orders.</p>					
ADM43-19 Part I	<p>Change existing definitions for APPENDIX B to:</p> <p>2018 International Building Code APPENDIX B BOARD OF APPEALS SECTION B101 GENERAL</p> <p>[A] B101.2-B101.3 Membership of board. The board of appeals shall consist of persons <u>five voting members</u> appointed by the chief appointing authority of the jurisdiction. Each member shall serve for <u>[INSERT NUMBER OF YEARS] years</u> or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board. as follows:</p> <ol style="list-style-type: none"> 1. One for 5 years; one for 4 years; one for 3 years; one for 2 years; and one for 1 year. 2. Thereafter, each new member shall serve for 5 years or until a successor has been appointed. <p>The building official shall be an ex officio member of said board but shall have no vote on any matter before the board.</p> <p>[A] B101.2.2-B101.3.1 Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction</u> one from each of the following professions or disciplines:</p> <ol style="list-style-type: none"> 1. Registered design professional with architectural experience or a builder or superintendent of building construction with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering experience. 3. Registered design professional with mechanical and plumbing engineering experience or a mechanical contractor with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work. 		X		Standardizes the language across the Codes and gives appropriate guidance to establish a board of appeals.	

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>4. Registered design professional with electrical engineering experience or an electrical contractor with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work.</p> <p>5. Registered design professional with fire protection engineering experience or a fire protection contractor with not fewer than 10 years of experience, 5 of which shall have been in responsible charge of work.</p> <p>[A] B101.2.1 B101.3.2 Alternate members. The chief appointing authority shall is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years, the same term or until a successor has been appointed.</p> <p>[A] B101.2.4 B101.3.4 Chairperson. The board shall annually select one of its members to serve as chairperson.</p> <p>[A] B101.2.6 B101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the <u>board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</u></p> <p>[A] B101.2.5 B101.3.6 Disqualification Conflict of member interest. A member shall not hear an appeal in which that member has a with any personal, professional or financial interest. interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>[A] B101.2.7 B101.3.7 Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] B101.2.3 B101.4 Rules and procedures. The board is authorized to shall establish policies and procedures necessary to carry out its duties <u>consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</u></p> <p>[A] B101.3 B101.5 Notice of meeting. The board shall meet upon notice from the chairperson, within 10 days of the filing of an appeal or at stated periodic meetings.</p> <p>[A] B101.3.1 B101.5.1 Open hearing. All hearings before the board shall be open to the public. The appellant, the appellant's</p>					

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CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
		Sub Code:				
	<p>representative, the building official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>[A] B101.3.3 <u>B101.5.3</u> Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>[A] B101.4 <u>B101.7</u> Board decision. The board shall modify or reverse the decision of the <i>building official</i> by a concurring vote of two-thirds of its <u>members</u>. <u>The board shall only modify or reverse the decision of the code official by a concurring vote of three or more members.</u></p> <p>[A] B101.4.1 <u>B101.7.1</u> Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be</u> furnished to the appellant or the appellant's representative and to the building code official.</p> <p>[A] B101.4.2 <u>B101.7.2</u> Administration. The <i>building official</i> shall take immediate action in accordance with the decision of the board.</p> <p>2018 International Fire Code</p> <p style="text-align: center;">APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p>A101.1 Scope. A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of the International Fire Code <u>this code</u> pursuant to the provisions of Section 108 of the International Fire Code. <u>109.</u> The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the fire code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p>A101.3 Terms-Membership of office-board. Members shall be appointed for terms of 4 years. Members shall not be reappointed to serve more than two consecutive full terms. <u>The board shall consist of five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member’s terms shall be staggered at intervals, so as to provide continuity. The fire code official shall be an ex officio member of said board but shall not vote on any matter before the board.</u></p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>A101.3.2 A101.3.3 Vacancies. Vacancies shall be filled for an unexpired term in the <u>same</u> manner in which original appointments are required to be made. Members appointed to fill a vacancy in an unexpired term shall be eligible for reappointment to two full terms.</p> <p>A101.5 A101.3.5 Secretary of board. The fire code official shall act as secretary of the board and shall keep chief appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all its proceedings, which shall set forth the reasons for its decisions the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>A101.8 A101.3.6 Conflict of interest. Members with a material A member with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>A101.3.3 A101.3.8 Removal from office the board. Members A member shall be removed from office the board prior to the end of their terms only for cause. Continued absence of any member cause. Any member with continued absence from regular meetings meeting of the board shall, may be removed at the discretion of the applicable governing body, render any such member liable to immediate removal from office. chief appointing authority.</p> <p>A101.10 A101.4 Procedures. Rules and procedures. The board shall be operated in accordance with the Administrative Procedures Act of the state in which it is established or shall establish rules and regulations for its own procedure not inconsistent establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</p> <p>A101.7 A101.5 Meetings. Notice of meetings. The board shall meet at regular intervals, to be determined by the chairman. In any event, the board shall meet upon notice from the chairperson, within 10 days after notice of appeal has been received. the filing of an appeal or at stated periodic intervals.</p> <p>A101.4 A101.5.2 Quorum. Three members of the board shall constitute a quorum. In varying the application of any provisions of this code or in modifying an order of the fire code official, affirmative votes of the majority present, but not less than three, shall be required.</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration.<u>consideration.</u> Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.</p> <p>2018 International Fuel Gas Code</p> <p>[A] 109.2.1 A101.3 Membership of board. The board of appeals shall consist of five <u>voting</u> members appointed by the chief appointing authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 <u>[INSERT NUMBER OF YEARS]</u> years or until a successor has been appointed. <u>The board member's terms shall be staggered at intervals, so as to provide continuity.</u> The code official shall be an <u>ex officio</u> member of said board but shall not vote on any matter before the board.</p> <p>[A] 109.2.1 A101.3.1 Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</u> one from each of the following professions or disciplines:</p> <ol style="list-style-type: none"> 1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering or architectural experience. 3. Registered design professional with fuel gas and plumbing engineering experience; or a fuel gas contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. 4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. 5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. <p>[A] 109.2.2 A101.3.2 Alternate members. The chief appointing authority shall is authorized to appoint two alternate members who shall be called by the board chairman <u>chairperson</u> to hear appeals during the absence or disqualification of a member.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years, the same term or until a successor has been appointed.</p> <p>[A] 109.2.3 A101.3.4 Chairman. Chairperson. The board shall annually select one of its members to serve as chairman- chairperson.</p> <p>[A] 109.2.5 A101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>[A] 109.2.4 A101.3.6 Disqualification Conflict of member-interest. A member shall not hear an appeal in which that member has a with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>[A] 109.2.6 A101.3.7 Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 109.4.1 A101.4 Procedure-Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received- presented.</p> <p>[A] 109.3 A101.5 Notice of meeting. The board shall meet upon notice from the chairman-chairperson, within 10 days of the filing of an appeal, or at stated periodic meetings-intervals.</p> <p>[A] 109.5 A101.5.3 Postponed hearing. Where-When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.</p> <p>[A] 109.6 A101.7 Board decision. The board shall only modify or reverse the decision of the code official by a concurring vote of three or more members.</p> <p>[A] 109.6.1 A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be-Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p> <p>[A] 109.6.2 <u>A101.7.2 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 109.7 <u>A101.8 Court review.</u> Any person, whether or not a previous party to of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Mechanical Code</p> <p>[A] 109.2 <u>A101.3 Membership of board.</u> The board of appeals shall consist of five <u>voting members</u> appointed by the chief appointing authority as follows: one for 5 years; one for 4 years; one for 3 years; one for 2 years; and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for <u>5</u> [INSERT NUMBER OF YEARS] years or until a successor has been appointed. <u>The board member's terms shall be staggered at intervals, so as to provide continuity.</u> The code official shall be an <u>ex officio</u> member of said board but shall not vote on any matter before the board.</p> <p>[A] 109.2.1 <u>A101.3.1 Qualifications.</u> The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines.</u></p> <ol style="list-style-type: none"> 1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering or architectural experience. 3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. 4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. 5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 of which shall have been in responsible charge of work. 					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 109.2.2 <u>A101.3.2</u> Alternate members. The chief appointing authority shall is authorized to appoint two alternate members who shall be called by the board chairman-chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years, the same term or until a successor has been appointed.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p>[A] 109.2.3 <u>A101.3.4</u> Chairman-Chairperson. The board shall annually select one of its members to serve as chairman-chairperson.</p> <p>[A] 109.2.5 <u>A101.3.5</u> Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>[A] 109.2.4 <u>A101.3.6</u> Disqualification Conflict of member-interest. A member shall not hear an appeal in which that member has a with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>[A] 109.2.6 <u>A101.3.7</u> Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 109.4.1 <u>A101.4</u> Procedure-Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received, presented.</p> <p>[A] 109.3 <u>A101.5</u> Notice of meeting. The board shall meet upon notice from the chairman-chairperson, within 10 days of the filing of an appeal, or at stated periodic meetings-intervals.</p> <p>[A] 109.5 <u>A101.5.3</u> Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 109.6-A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three <u>or more</u> members.</p> <p>[A] 109.6.1-A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant's representative and to the code official.</u></p> <p>[A] 109.6.2-A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 109.7-A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Plumbing Code</p> <p>109.2-A101.3 Membership of board. The board of appeals shall consist of five <u>voting</u> members appointed by the chief appointing authority as follows: <u>one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for 5 [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</u></p> <p>109.2.1-A101.3.1 Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines:</u></p> <ol style="list-style-type: none"> 1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 2. Registered design professional with structural engineering or architectural experience. 3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing contractor with not less than 10 years' experience, 5 years of which shall have been in 					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>responsible charge of work.</p> <p>4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p><u>109.2.2 A101.3.2 Alternate members.</u> The chief appointing authority shall is authorized to appoint two alternate members who shall be called by the board chairman-chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years <u>the same term</u> or until a successor has been appointed.</p> <p><u>109.2.3 A101.3.4 Chairman-Chairperson.</u> The board shall annually select one of its members to serve as chairman- <u>chairperson.</u></p> <p><u>109.2.5 A101.3.5 Secretary.</u> The chief administrative officer <u>appointing authority</u> shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, <u>which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</u></p> <p><u>109.2.4 A101.3.6 Disqualification-Conflict of member-interest.</u> A member shall not hear an appeal in which that member has with <u>any personal, professional or financial interest-interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</u></p> <p><u>109.2.6 A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p><u>109.4.1 A101.4 Procedure-Rules and procedures.</u> The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. <u>establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law.</u> The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received-presented.</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>109.3 A101.5 Notice of meeting. The board shall meet upon notice from the chairman chairperson, within 10 days of the filing of an appeal or at stated periodic meetings intervals.</p> <p>109.4 A101.5.1 Open hearing. Hearings All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>109.5 A101.5.3 Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>109.6 A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three <u>or more</u> members.</p> <p>109.6.1 A101.7.1 Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p> <p>109.6.2 A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>109.7 A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Private Sewage Disposal Code</p> <p>[A] 109.2 A101.3 Membership of board. The board of appeals shall consist of five <u>voting</u> members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for <u>5</u> [INSERT NUMBER OF YEARS] years or until a successor has been appointed. <u>The board member’s terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</u></p> <p>[A] 109.2.1 A101.3.1 Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines.</u></p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	<p>1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>2. Registered design professional with structural engineering or architectural experience.</p> <p>3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>5. Registered design professional with fire protection engineering experience; or a fire protection contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>[A] 109.2.2 <u>A101.3.2</u> Alternate members. The chief appointing authority shall be authorized to appoint two alternate members who shall be called by the board chairman <u>chairperson</u> to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years <u>the same term</u> or until a successor has been appointed.</p> <p>[A] 109.2.3 <u>A101.3.4</u> Chairman-Chairperson. The board shall annually select one of its members to serve as chairman <u>chairperson</u>.</p> <p>[A] 109.2.5 <u>A101.3.5</u> Secretary. The chief administrative officer <u>appointing authority</u> shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, <u>which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</u></p> <p>[A] 109.2.4 <u>A101.3.6</u> Disqualification-Conflict of a member. <u>interest.</u> A member shall not hear an <u>appeal in which that member has with</u> any personal, professional or financial interest in a matter before the board shall declare such interest and <u>refrain from participating in discussions, deliberations and voting on such matters.</u></p> <p>[A] 109.2.6 <u>A101.3.7</u> Compensation of members. Compensation of members shall be determined by law.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 109.4.1 <u>A101.4 Procedure, Rules and procedures.</u> The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. <u>establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law.</u> The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received. <u>presented.</u></p> <p>[A] 109.3 <u>A101.5 Notice of meeting.</u> The board shall meet upon notice from the chairman <u>chairperson</u>, within 10 days of the filing of an appeal or at stated periodic meetings. <u>intervals.</u></p> <p>[A] 109.5 <u>A101.5.3 Postponed hearing.</u> When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>[A] 109.6 <u>A101.7 Board decision.</u> The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three or more <u>members.</u></p> <p>[A] 109.6.1 <u>A101.7.1 Resolution.</u> The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</u></p> <p>[A] 109.6.2 <u>A101.7.2 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 109.7 <u>A101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Property Maintenance Code</p> <p>[A] 111.8 <u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders (other, other than Imminent Danger notices) <u>notices</u>, shall stay the enforcement of the notice and order until the appeal is heard by the appeals <u>board.</u></p> <p>[A] 111.2 <u>A101.3 Membership of board.</u> The board of appeals shall consist of not less than three members who are qualified by experience and training to pass on matters pertaining to property maintenance and who are not employees of the jurisdiction. <u>The five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been</u></p>					

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CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>appointed. The board member’s terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio ex officio member of said board but shall not vote on any matter before the board. The board shall be appointed by the chief appointing authority, and shall serve staggered and overlapping terms.</u></p> <p>[A] 111.2.1 A101.3.2 Alternate members. The chief appointing authority shall appoint not less than is authorized to appoint two alternate members who shall be called by the board chairman chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p>[A] 111.2.2 A101.3.4 Chairman-Chairperson. The board shall annually select one of its members to serve as chairman chairperson.</p> <p>[A] 111.2.4 A101.3.5 Secretary. The chief administrative officer appointing authority shall designate a qualified person clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the board’s decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>[A] 111.2.3 A101.3.6 Disqualification-Conflict of member-interest. A member shall not hear an appeal in which that member has a with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>[A] 111.2.5 A101.3.7 Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 111.4.1 A101.4 Procedure-Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received presented.</p> <p>[A] 111.3 A101.5 Notice of meeting. The board shall meet upon notice from the chairman chairperson, within 20 10 days of the filing of an appeal, or at stated periodic meetings intervals.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[A] 111.5-A101.5.3 Postponed hearing. When the full board is five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>[A] 111.6-A101.7 Board decision. The board shall <u>only</u> modify or reverse the decision of the code official only by a concurring vote of a majority of the total number of appointed board three <u>or more</u> members.</p> <p>[A] 111.6.1-A101.7.1 Records and copies- Resolution. The decision of the board shall be recorded. Copies shall be by <u>resolution. Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant's representative and to the code official.</u></p> <p>[A] 111.6.2-A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 111.7-A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Swimming Pool and Spa Code</p> <p>[A] 108.2-A101.3 Membership of board. The board of appeals shall consist of five <u>voting</u> members appointed by the chief appointing authority as follows: one for 5 years, one for 4 years, one for 3 years, one for 2 years and one for 1 year. Thereafter, each new of the jurisdiction. Each member shall serve for <u>5</u> 5 <u>[INSERT NUMBER OF YEARS]</u> years or until a successor has been appointed. <u>The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</u></p> <p>[A] 108.2.1-A101.3.1 Qualifications. The board of appeals shall consist of five individuals, <u>who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction. one from each of the following professions or disciplines:</u></p> <ol style="list-style-type: none"> 1. Registered design professional who is a registered architect; or a builder or superintendent of building construction with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work. 					

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		Decrease	None	Increase		
Sub Code:						
	<p>2. Registered design professional with structural engineering or architectural experience.</p> <p>3. Registered design professional with mechanical and plumbing engineering experience; or a mechanical and plumbing contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>4. Registered design professional with electrical engineering experience; or an electrical contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>5. Registered design professional with pool or spa experience; or a contractor with not less than 10 years' experience, 5 years of which shall have been in responsible charge of work.</p> <p>[A] 108.2.2 <u>A101.3.2</u> Alternate members. The chief appointing authority shall be authorized to appoint two alternate members who shall be called by the board chairman chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for 5 years the same term or until a successor has been appointed.</p> <p>[A] 108.2.3 <u>A101.3.4</u> Chairman. Chairperson. The board shall annually select one of its members to serve as chairman chairperson.</p> <p>[A] 108.2.5 <u>A101.3.5</u> Secretary. The chief administrative officer appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings in the office of the chief administrative officer, which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p>[A] 108.2.4 <u>A101.3.6</u> Disqualification-Conflict of member-interest. A member shall not hear an appeal in which that member has with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p>[A] 108.2.6 <u>A101.3.7</u> Compensation of members. Compensation of members shall be determined by law.</p> <p>[A] 108.4.1 <u>A101.4</u> Procedure. Rules and procedures. The board shall adopt and make available to the public through the secretary procedures under which a hearing will be conducted. establish policies and procedures necessary to carry out its</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be received, <u>presented.</u></p> <p>[A] 108.3 <u>101.5</u> Notice of meeting. The board shall meet upon notice from the chairman <u>chairperson</u>, within 10 days of the filing of an appeal or at stated periodic meetings, <u>intervals.</u></p> <p>[A] 108.4 <u>101.5.1</u> Open hearing. Hearings. All hearings before the board shall be open to the public. The appellant, the appellant's representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>[A] 108.5 <u>101.5.3</u> Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.</p> <p>[A] 108.6 <u>101.7</u> Board decision. The board shall <u>only</u> modify or reverse the decision of the code official by a concurring vote of three or more members.</p> <p>[A] 108.6.1 <u>101.7.1</u> Resolution. The decision of the board shall be by resolution. Certified copies shall be <u>Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant's representative and to the code official.</u></p> <p>[A] 108.6.2 <u>101.7.2</u> Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>[A] 108.7 <u>101.8</u> Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court <u>for a writ of certiorari</u> to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Wildland-Urban Interface Code SECTION 106 APPEALS</p> <p>[A] 106.1 General. To determine the suitability of alternative materials and methods and to provide for reasonable interpretations of the provisions of this code, there shall be and hereby is created a board of appeals consisting of five members who are qualified by experience and training to pass judgment on pertinent matters. The code official, building official and fire chief shall be ex officio members, and the code official shall act as secretary of the board. The board of appeals shall be appointed</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>by the legislative body and shall hold office at their discretion. The board shall adopt reasonable rules and regulations for conducting its investigations and shall render decisions and findings in writing to the code official, with a duplicate copy to the applicant.</p> <p>Delete existing definition for [A] B101.1 Application, [A] B101.3.2 Procedure, A101.2 Membership, A101.2.1 Design professional, A101.2.2 Fire protection engineering professional, A101.2.3 Industrial safety professional, A101.2.4 General contractor, A101.2.5 General industry or business representative, A101.3.1 Initial appointments, and A101.9 Decisions.</p> <p>Add new definition for SECTION B101 as follows:</p> <p>2018 International Building Code</p> <p><u>B101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 113 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the building official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>B101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the building official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the building official within 20 days after the notice was served.</p> <p><u>B101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>B101.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>B101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>B101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of</p>					

Table 5. 2021 IPC Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p>the board may be removed at the discretion of the chief appointing authority.</p> <p><u>B101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>B101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p><u>B101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Existing Building Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 112. The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p>					

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Table 5. 2021 IPC Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.3 Membership of board.</u> The board shall consist of five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</p> <p><u>A101.3.1 Qualifications.</u> The board shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p> <p><u>A101.3.2 Alternate members.</u> The chief appointing authority is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.4 Chairperson.</u> The board shall annually select one of its members to serve as chairperson.</p> <p><u>A101.3.5 Secretary.</u> The chief appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p><u>A101.3.6 Conflict of interest.</u> A member with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p><u>A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>A101.4 Rules and procedures.</u> The board shall establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The</p>					

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		Decrease	None	Increase		
Sub Code:						
	<p>procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</p> <p>A101.5 Notice of meeting. The board shall meet upon notice from the chairperson, within 10 days of the filing of an appeal or at stated periodic intervals.</p> <p>A101.5.1 Open hearing. All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>A101.5.2 Quorum. Three members of the board shall constitute a quorum.</p> <p>A101.5.3 Postponed hearing. When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p>A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>A101.7 Board decision. The board shall only modify or reverse the decision of the code official by a concurring vote of three or more members.</p> <p>A101.7.1 Resolution. The decision of the board shall be by resolution. Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</p> <p>A101.7.2 Administration. The code official shall take immediate action in accordance with the decision of the board.</p> <p>A101.8 Court review. Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p> <p>2018 International Fire Code</p> <p>A101.2 Application for appeal. Any person shall have the right to appeal a decision of the fire code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been</p>					

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		Decrease	None	Increase		
Sub Code:						
	<p><u>incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the fire code official within 20 days after the notice was served.</u></p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A102.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.1 Qualifications.</u> The board shall consist of members who are qualified by experience and training to pass on matters pertaining to hazards of fire, explosions, hazardous conditions or fire protection systems, and are not employees of the jurisdiction.</p> <p><u>A101.3.2 Alternate members.</u> The chief appointing authority is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p><u>A101.3.4 Chairperson.</u> The board shall annually select one of its members to serve as chairperson.</p> <p><u>A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p><u>A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the fire code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.3 Postponed hearing.</u> When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p><u>A101.7 Board decision.</u> The board shall only modify or reverse the decision of the fire code official by a concurring vote of three or more members.</p> <p><u>A101.7.1 Resolution.</u> The decision of the board shall be by resolution. Every decision shall be promptly filed in writing in the office of the fire code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the fire code official.</p>					

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		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.7.2 Administration.</u> The fire code official shall take immediate action in accordance with the <u>decision of the board.</u></p> <p><u>A101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to <u>apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</u></p> <p>2018 International Fuel Gas Code</p> <p style="text-align: center;">APPENDIX A BOARD OF APPEALS A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing <u>applications for modification of the requirements of this code pursuant to the provisions of Section 109 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</u></p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to <u>appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</u></p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have <u>authority to waive requirements of this code or interpret the administration of this code.</u></p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, <u>shall stay the enforcement of the notice and order until the appeal is heard by the board.</u></p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original <u>appointments are required to be made.</u></p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their <u>terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</u></p>					

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		Decrease	None	Increase		
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	<p><u>[A] A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>2018 International Mechanical Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 109 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p>					

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	<p><u>[A] A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>2018 International Plumbing Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section XXX (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause.</p>					

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Sub Code:						
	<p><u>Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</u></p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.</p> <p>2018 International Private Sewage Disposal Code</p> <p style="text-align: center;"><u>APPENDIX A</u> <u>BOARD OF APPEALS</u> <u>SECTION A101</u> <u>GENERAL</u></p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 109 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause.</p> <p><u>Any member with continued absence from regular meeting of</u></p>					

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	<p>the board may be removed at the discretion of the chief appointing authority.</p> <p>[A] A101.5.1 Open hearing. All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p>A101.5.2 Quorum. Three members of the board shall constitute a quorum.</p> <p>A101.6 Legal counsel. The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>2018 International Property Maintenance Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p>A101.1 Scope. A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 111 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p>A101.2 Application for appeal. Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p>A101.2.1 Limitation of authority. The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p> <p>A101.3.1 Qualifications. The board shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p>					

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	<p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>[A] A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p>2018 International Swimming Pool and Spa Code APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 108 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the code official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p>					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.</p> <p>2018 International Wildland-Urban Interface Code</p> <p style="text-align: center;">APPENDIX A BOARD OF APPEALS SECTION A101 GENERAL</p> <p><u>A101.1 Scope.</u> A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 106 (Means of Appeals). The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the building official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.</p> <p><u>A101.2 Application for appeal.</u> Any person shall have the right to appeal a decision of the code official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted hereunder have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed. The application shall be filed on a form obtained from the code official within 20 days after the notice was served.</p> <p><u>A101.2.1 Limitation of authority.</u> The board shall not have authority to waive requirements of this code or interpret the administration of this code.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.2.2 Stays of enforcement.</u> Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.</p> <p><u>A101.3 Membership of board.</u> The board shall consist of five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed. The board member's terms shall be staggered at intervals, so as to provide continuity. The code official shall be an ex officio member of said board but shall not vote on any matter before the board.</p> <p><u>A101.3.1 Qualifications.</u> The board shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.</p> <p><u>A101.3.2 Alternate members.</u> The chief appointing authority is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member. Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.</p> <p><u>A101.3.3 Vacancies.</u> Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.</p> <p><u>A101.3.4 Chairperson.</u> The board shall annually select one of its members to serve as chairperson.</p> <p><u>A101.3.5 Secretary.</u> The chief appointing authority shall designate a qualified clerk to serve as secretary to the board. The secretary shall file a detailed record of all proceedings which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.</p> <p><u>A101.3.6 Conflict of interest.</u> A member with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.</p> <p><u>A101.3.7 Compensation of members.</u> Compensation of members shall be determined by law.</p> <p><u>A101.3.8 Removal from the board.</u> A member shall be removed from the board prior to the end of their terms only for cause. Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>A101.4 Rules and procedures.</u> The board shall establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law. The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.</p> <p><u>A101.5 Notice of meeting.</u> The board shall meet upon notice from the chairperson, within 10 days of the filing of an appeal or at stated periodic intervals.</p> <p><u>A101.5.1 Open hearing.</u> All hearings before the board shall be open to the public. The appellant, the appellant’s representative, the code official and any person whose interests are affected shall be given an opportunity to be heard.</p> <p><u>A101.5.2 Quorum.</u> Three members of the board shall constitute a quorum.</p> <p><u>A101.5.3 Postponed hearing.</u> When five members are not present to hear an appeal, either the appellant or the appellant’s representative shall have the right to request a postponement of the hearing.</p> <p><u>A101.6 Legal counsel.</u> The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction’s expense in all matters arising from service within the scope of their duties.</p> <p><u>A101.7 Board decision.</u> The board shall only modify or reverse the decision of the code official by a concurring vote of three or more members.</p> <p><u>A101.7.1 Resolution.</u> The decision of the board shall be by resolution. Every decision shall be promptly filed in writing in the office of the code official within three days and shall be open to the public for inspection. A certified copy shall be furnished to the appellant or the appellant’s representative and to the code official.</p> <p><u>A101.7.2 Administration.</u> The code official shall take immediate action in accordance with the decision of the board.</p> <p><u>A101.8 Court review.</u> Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law. Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.</p>					

Table 5. 2021 IPC Changes Cost Impact

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Sub Code:						
F14-18 Part I	<p>Add new definition for 311.2.2 Fire protection, 403.11.1.2 Lease plan, Security access turnstiles, 428.3.9 Automatic sprinkler systems, 506.2.2.1 Group H-2 or H-3 mixed occupancies, 506.2.4.1 Group H-2 or H-3 mixed occupancies, Plumbing, mechanical and electrical components, Surface-burning characteristics, 3104.5.3 Open sides on walkway, 2606.7.4 Automatic sprinkler system, and 1203.4 Transoms as follows:</p> <p>2018 International Fire Code</p> <p>311.2.2 Fire protection. Fire alarm, automatic sprinkler systems and stand-pipe systems shall be maintained in an operable condition at all times.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Where the premises have been cleared of all combustible materials and debris and, in the opinion of the fire code official, the type of construction, fire separation distance and security of the premises do not create a fire hazard. 2. Where approved by the fire code official, buildings that will not be heated and where fire protection systems will be exposed to freezing temperatures, fire alarm and automatic sprinkler systems are permitted to be placed out of service and standpipes are permitted to be maintained as dry systems (without an automatic water supply), provided that the building does not have contents or storage, and windows, doors and other openings are secured to prohibit entry by unauthorized persons. 3. Where approved by the fire code official, fire alarm and automatic sprinkler systems are permitted to be placed out of service in seasonally occupied buildings: that will not be heated; where fire protection systems will be exposed to freezing temperatures; where fire areas do not exceed 12,000 square feet (1115 m²); and that do not store motor vehicles or hazardous materials. <p>403.11.1.2 Lease plan. In addition to the requirements of Section 404.2.2, a lease plan that includes the following information shall be prepared for each covered and open mall building:</p> <ol style="list-style-type: none"> 1. Each occupancy, including identification of tenant. 2. Exits from each tenant space. 		X			Necessary addition for clarification

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>3. Fire protection features, including the following:</p> <ul style="list-style-type: none"> 3.1. Fire department connections. 3.2. Fire command center. 3.3. Smoke management system controls. 3.4. Elevators, elevator machine rooms and controls. 3.5. Hose valve outlets. 3.6. Sprinkler and standpipe control valves. 3.7. Areas protected with automatic sprinkler systems and automatic fire-extinguishing systems. 3.8. Automatic fire detector zones. 3.9. Fire walls, fire barriers, fire partitions <p>903.1.1 Alternative protection. Alternative automatic fire-extinguishing systems complying with Section 904 shall be permitted instead of automatic sprinkler <u>system</u> protection where recognized by the applicable standard and approved by the fire code official.</p> <p>903.5 Testing and maintenance. <u>Automatic</u> sprinkler systems shall be tested and maintained in accordance with Section 901.</p> <p>[BE] 1010.3.2 Security access turnstiles. Security access turnstiles that inhibit travel in the direction of egress utilizing a physical barrier shall be permitted to be considered as a component of the means of egress, provided that all of the following criteria are met:</p> <ul style="list-style-type: none"> 1. The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 903.3.1.1. 2. Each security access turnstile lane configuration has a minimum clear passage width of 22 inches (559 mm). 3. Any security access turnstile lane configuration providing a clear passage width of less than 32 inches (810 mm) shall be credited with a maximum egress capacity of 50 persons. 4. Any security access turnstile lane configuration providing a clear passage width of 32 inches (810 mm) or more shall be credited with a maximum egress capacity as calculated in accordance with Section 1005. 5. Each secured physical barrier shall automatically retract or swing to an unobstructed open position in the direction of egress, under each of the following conditions: <ul style="list-style-type: none"> 5.1. Upon loss of power to the turnstile or any part of the access control system that secures the physical barrier. 5.2. Upon actuation of a clearly identified manual release device with ready access that results in direct 					

Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>interruption of power to each secured physical barrier, after which such barriers remain in the open position for not less than 30 seconds. The manual release device shall be positioned at one of the following locations:</p> <p>5.2.1. On the egress side of each security access turnstile lane.</p> <p>5.2.2. At an approved location where it can be actuated by an employee assigned to the area at all times that the building is occupied.</p> <p>5.3. Upon actuation of the building fire alarm system, if provided, after which the physical barrier remains in the open position until the fire alarm system is manually reset. Exception: Actuation of a manual fire alarm box.</p> <p>5.4. Upon actuation of the building automatic sprinkler system or fire detection system, after which the physical barrier remains in the open position until the fire alarm system is manually reset.</p> <p>2018 International Building Code 428.3.9 Automatic sprinkler systems. Buildings containing laboratory suites shall be equipped throughout with an <u>approved</u> automatic sprinkler system in accordance with Section 903.3.1.1.</p> <p>506.2.2.1 Group H-2 or H-3 mixed occupancies. For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the automatic sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.</p> <p>506.2.4.1 Group H-2 or H-3 mixed occupancies. For a building containing Group H-2 or H-3 occupancies, the allowable area shall be determined in accordance with Section 508.4.2, with the automatic sprinkler system increase applicable only to the portions of the building not classified as Group H-2 or H-3.</p> <p>Plumbing, mechanical and electrical components. Periodic special inspection of plumbing, mechanical and electrical components shall be required for the following:</p> <ol style="list-style-type: none"> 1. Anchorage of electrical equipment for emergency and standby power systems in structures assigned to Seismic Design Category C, D, E or F. 2. Anchorage of other electrical equipment in structures assigned to Seismic Design Category E or F. 					

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CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>3. Installation and anchorage of piping systems designed to carry hazardous materials and their associated mechanical units in structures assigned to Seismic Design Category C, D, E or F.</p> <p>4. Installation and anchorage of ductwork designed to carry hazardous materials in structures assigned to Seismic Design Category C, D, E or F.</p> <p>5. Installation and anchorage of vibration isolation systems in structures assigned to Seismic Design Category C, D, E or F where the approved construction documents require a nominal clearance of ¹/₄ inch (6.4 mm) or less between the equipment support frame and restraint.</p> <p>6. Installation of mechanical and electrical equipment, including duct work, piping systems and their structural supports, where automatic fire-sprinkler systems are installed in structures assigned to Seismic Design Category C, D, E or F to verify one of the following:</p> <p>6.1. Minimum clearances have been provided as required by Section 13.2.3 ASCE/SEI 7.</p> <p>6.2. A nominal clearance of not less than 3 inches (76 mm) has been provided between automatic sprinkler system drops and sprigs and: structural members not used collectively or independently to support the sprinklers; equipment attached to the building structure; and other systems' piping.</p> <p>Where flexible sprinkler hose fittings are used, special inspection of minimum clearances is not required.</p> <p>2603.3 Surface-burning characteristics. Unless otherwise indicated in this section, foam plastic insulation and foam plastic cores of manufactured assemblies shall have a flame spread index of not more than 75 and a smoke-developed index of not more than 450 where tested in the maximum thickness intended for use in accordance with ASTM E84 or UL 723. Loose fill-type foam plastic insulation shall be tested as board stock for the flame spread and smoke-developed indices.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Smoke-developed index for interior trim as provided for in Section 2604.2. 2. In cold storage buildings, ice plants, food plants, food processing rooms and similar areas, foam plastic insulation where tested in a thickness of 4 inches (102 mm) shall be permitted in a thickness up to 10 inches (254 mm) where the building is equipped throughout with an automatic fire-sprinkler system in accordance 					

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		Decrease	None	Increase		
Sub Code:						
	<p>with Section 903.3.1.1. The approved automatic sprinkler system shall be provided in both the room and that part of the building in which the room is located.</p> <ol style="list-style-type: none"> 3. Foam plastic insulation that is a part of a Class A, B or C roof-covering assembly provided that the assembly with the foam plastic insulation satisfactorily passes NFPA 276 or UL 1256. The smoke-developed index shall not be limited for roof applications. 4. Foam plastic insulation greater than 4 inches (102 mm) in thickness shall have a maximum flame spread index of 75 and a smoke-developed index of 450 where tested at a minimum thickness of 4 inches (102 mm), provided that the end use is approved in accordance with Section 2603.9 using the maximum thickness and density intended for use. 5. Flame spread and smoke-developed indices for foam plastic interior signs in covered and open mall buildings provided that the signs comply with Section 402.6.4. <p>3104.5.3 Open sides on walkway. Where the distance between the connected buildings is more than 10 feet (3048 mm), the walls at the intersection of the pedestrian walkway and each building need not be fire-resistance rated provided that both sidewalls of the pedestrian walkway are not less than 50 percent open with the open area uniformly distributed to prevent the accumulation of smoke and toxic gases. The roof of the walkway shall be located not more than 40 feet (12 160 mm) above grade plane, and the walkway shall only be permitted to connect to the third or lower story of each building.</p> <p>Exception: Where the pedestrian walkway is protected with <u>an automatic sprinkler system</u> in accordance with Section 903.3.1.1, the roof of the walkway shall be located not more than 55 feet (16 764 mm) above grade plane and the walkway shall only be permitted to connect to the fifth or lower story of each building.</p> <p>2606.7.4 Fire suppression-Automatic sprinkler system. In buildings that are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, plastic light-diffusing systems shall be protected both above and below unless the sprinkler system has been specifically approved for installation only above the light-diffusing system. Areas of light-diffusing systems that are protected in accordance with this section shall not be limited.</p> <p>2018 International Existing Building Code</p>					

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Table 5. 2021 IPC Changes Cost Impact

CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	Transoms. In buildings equipped throughout with automatic sprinkler systems of Group R-1, R-2 or R-3, existing transoms in corridors and other fire-resistance-rated walls may be maintained if fixed in the closed position. A sprinkler shall be installed on each side of the transom.					
F297-18 Part II	Change existing definition for [F] 1202.1 Nonflammable medical gases to: [F] 1202.1 Nonflammable medical gases. Nonflammable medical gas systems, inhalation anesthetic systems and vacuum piping systems shall be designed installed, tested and installed labeled in accordance with NFPA 99. Exceptions: 1. This section shall not apply to portable systems or cylinder storage. 2. Vacuum system exhaust terminations shall comply with the International Mechanical Code.		X			Clarification
M10-18	Add new definitions for 307.1.2 Identification and 307.2.3.3 Identification as follows: 307.1.2 Identification. Where condensate piping is concealed, primary and secondary drain pipes that serve the same appliance and terminate together at a remote location shall be identified. The termination of concealed condensate piping shall be marked to indicate whether the piping is connected to the primary or to the secondary drain. 307.2.3.3 Identification. Where condensate piping is concealed, primary and secondary drain pipes that serve the same appliance and terminate together at a remote location shall be identified. The termination of concealed condensate piping shall be marked to indicate whether the piping is connected to the primary or to the secondary drain.		X			Clarification
M11-18	Add new definitions for 307.2.1.1 (IPC [M] 314.2.1.1) Condensate discharge as follows: 307.2.1.1 (IPC [M] 314.2.1.1) Condensate discharge. Condensate drains shall not directly connect to any plumbing drain, waste or vent pipe. Condensate drains shall not discharge into a plumbing fixture other than a floor sink, floor drain, trench drain, mop sink, hub drain, standpipe, utility sink or laundry sink. Condensate drain connections to a lavatory wye branch tailpiece or to a bathtub overflow pipe, shall not be considered as discharging to a plumbing fixture. Except where discharging to grade outdoors, the point of discharge of condensate drains shall be located within the same occupancy, tenant space or dwelling unit as the source of the condensate.		X			Necessary addition for clarification

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CODE CHANGE #	2021 IPC CHANGE SUMMARY	IPC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
M14-18	<p>Change existing definition for 307.2.2 Drain pipe materials and sizes to:</p> <p>307.2.2 Drain pipe materials and sizes. Components of the condensate disposal system shall be <u>ABS, cast iron, galvanized steel, copper, and copper alloy, CPVC, cross-linked polyethylene, galvanized steel, PE-RT, polyethylene, ABS polypropylene, CPVC, PVC, or polypropylene-PVDF</u> pipe or tubing. Components shall be selected for the pressure and temperature rating of the installation. Joints and connections shall be made in accordance with the applicable provisions of Chapter 7 of the International Plumbing Code relative to the material type. Condensate waste and drain line size shall be not less than <u>3/4-inch pipe size internal diameter</u> and shall not decrease in size from the drain pan connection to the place of condensate disposal. Where the drain pipes from more than one unit are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with Table 307.2.2.</p>		X			Clarification

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APPENDIX F

Table 6. 2021 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2021 IRC MECHANICAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RM1-18	CHAPTER 21 HYDRONIC PIPING <u>PRESS-CONNECT JOINT. A permanent mechanical joint incorporating an elastomeric seal or an elastomeric seal and corrosion-resistant grip or bite ring. The joint is made with a pressing tool and jaw or ring approved by the fitting manufacturer.</u>		X			Necessary addition for clarification
RM3-18	<u>M1307.7 Prohibited support. Gypsum board shall not be used as a support base under an appliance.</u>		X			Necessary addition for clarification
RM9-18	<u>M1411.3.1.2 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill, that portion of the appliance, equipment and insulation shall be installed above the rim of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and approved.</u>		X			Necessary addition for clarification
RM10-18	<u>M1411.6 Insulation of refrigerant piping. Piping and fittings for refrigerant vapor (suction) lines shall be insulated with insulation having a thermal resistivity of not less than R-4 <u>3</u> and having external surface permeance not exceeding 0.05 perm [2.87 ng/(s • m² • Pa)] when tested in accordance with ASTM E96.</u>	X			Decreasing insulation thermal resistivity may minimally decrease cost	Clarification
RM11-18	<u>M1411.8 Support of Refrigerant piping. Refrigerant piping & tubing shall be securely fastened to a permanent support within 6 feet of the compressor condensing unit, and within 3 feet of each subsequent bend or angle.</u>	X				Decrease cost and ease design and construction
RM13-18	<u>M1502.3 Duct termination. Exhaust ducts shall terminate on the outside of the building. Exhaust duct terminations shall be in accordance with the dryer manufacturer's installation instructions. If the manufacturer's instructions do not specify a termination location, the exhaust duct shall terminate not less than 3 feet (914 mm) in any direction from openings into buildings <u>including openings in ventilated soffits.</u> Exhaust duct terminations shall be equipped with a backdraft damper. Screens shall not be installed at the duct termination.</u>			X	Cost may increase \$75 per Dyer with extended duct	Clarification
RM22-18	<u>BALANCED VENTILATION. Any combination of concurrently operating mechanical exhaust and mechanical supply whereby the total mechanical exhaust airflow rate and is within 10% of the total mechanical supply airflow rate are substantially the same.</u>		X			Provide reasonable building

Table 6. 2021 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2021 IRC MECHANICAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE						
		Decrease	None	Increase								
Sub Code:												
	<p>M1505.4.3 Mechanical ventilation rate. The whole house mechanical ventilation system shall provide outdoor air at a continuous rate as determined in accordance with Table M1505.4.3(1) or Equation 15-1. Ventilation rate in cubic feet per minute = $0.01 \times$ total square foot area of house + $7.5 \times$ number of bedrooms + 1 (Equation 15-1)</p> <p>Exceptions:</p> <ol style="list-style-type: none"> The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate prescribed in Table M1505.4.3(1) is multiplied by the factor determined in accordance with Table M1505.4.3(2). The minimum mechanical ventilation rate determined in accordance with Table M1505.4.3(1) or Equation 15-1 shall be reduced by 25%-30%, provided that at both <u>both</u> of the following conditions apply: <ol style="list-style-type: none"> A ducted system supplies recirculated ventilation <u>recirculated ventilation</u> air directly to each bedroom and the largest common area. For continuously operating systems, not less than 70% of the air volume in the conditioned space is recirculated each hour through a ducted system, or for intermittently operating systems, an equivalent air recirculation is provided during each four hour period to one or more of the following rooms: <ol style="list-style-type: none"> <u>Living room</u> <u>Dinning room</u> <u>Kitchen</u> The whole-house ventilation system is a balanced ventilation system. 					pressurization, if needed.						
RM23-18	<p style="text-align: center;">TABLE M1505.4.4 MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>AREA TO BE EXHAUSTED</th> <th>EXHAUST RATES^a</th> </tr> </thead> <tbody> <tr> <td>Kitchens</td> <td>100 cfm intermittent or 25 cfm continuous</td> </tr> <tr> <td>Bathrooms-Toilet Rooms</td> <td>Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous</td> </tr> </tbody> </table> <p>For SI: 1 cubic foot per minute = 0.0004719 m³/s.</p> <p>a. <u>The listed exhaust rate for bathrooms-toilet rooms shall equal or exceed the exhaust rate at a minimum static pressure of 0.25 inch wc in accordance with Section M1505.3.</u></p>	AREA TO BE EXHAUSTED	EXHAUST RATES ^a	Kitchens	100 cfm intermittent or 25 cfm continuous	Bathrooms-Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous		X			Clarification
AREA TO BE EXHAUSTED	EXHAUST RATES ^a											
Kitchens	100 cfm intermittent or 25 cfm continuous											
Bathrooms-Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous											

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Table 6. 2021 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2021 IRC MECHANICAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RM24-18	<p>BALANCED VENTILATION SYSTEM. A ventilation system where the <u>total supply airflow and total exhaust airflow are simultaneously within 10% of their average. The balanced ventilation system airflow is the average of the supply and exhaust airflows.</u></p> <p>M1505.1 General. Where local exhaust or whole-house mechanical ventilation is provided, the equipment-ventilation system shall be designed in accordance with this section.</p> <p>M1505.4.3 Mechanical ventilation rate. The whole house mechanical ventilation system shall provide outdoor air at a continuous rate as not less than that determined in accordance with Table M1505.4.3(1) or <u>not less than that determined by Equation 15-1.</u></p> <p>Ventilation rate in cubic feet per minute = $(0.01 \times \text{total square foot area of house}) + [7.5 \times (\text{number of bedrooms} + 1)]$ (Equation 15-1)</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Ventilation rate credit.</u> Where a whole-house mechanical balanced ventilation system is provided, the whole-house mechanical ventilation system rate shall be permitted to be adjusted by multiplying the ventilation rate determined in accordance with Table M1505.4.3(1) or by Equation 15-1 by 0.7. <u>Programmed intermittent operation.</u> The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate prescribed in Table M1505.4.3(1), by Equation 15-1, or by Exception 1 is multiplied by the factor determined in accordance with Table M1505.4.3(2). 	X			Minimal	The 10% average improves on RM-22
RM29-18	<p>M1505.4.2 System controls. The whole-house mechanical ventilation system shall be provided with controls that enable manual override. <u>Controls shall include text or a symbol indicating their function.</u></p>			X	Minimal \$50 each	Clarification
RM30-18	<p>M1505.3 Exhaust equipment. Exhaust equipment serving single dwelling units fans and whole-house mechanical ventilation fans shall be listed and labeled as providing the minimum required airflow in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.</p>		X			Clarification
RM32-18	<p>M1601.1.1 Above-ground duct systems. Above-ground duct systems shall conform to the following:</p> <ol style="list-style-type: none"> Equipment connected to duct systems shall be designed to limit discharge air temperature to not greater than 250°F (121°C). 		X			Clarification

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Table 6. 2021 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2021 IRC MECHANICAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2. Factory-made ducts shall be listed and labeled in accordance with UL 181 and installed in accordance with the manufacturer's instructions.</p> <p>3. Fibrous glass duct construction shall conform to the SMACNA Fibrous Glass Duct Construction Standards or NAIMA Fibrous Glass Duct Construction Standards.</p> <p>4. Field-fabricated and shop-fabricated metal and flexible duct constructions shall conform to the SMACNA HVAC Duct Construction Standards—Metal and Flexible except as allowed by Table M1601.1.1. Galvanized steel shall conform to ASTM A653.</p> <p>5. The use of gypsum products to construct return air ducts or plenums is permitted, provided that the air temperature does not exceed 125°F (52°C) and exposed surfaces are not subject to condensation.</p> <p>6. Duct systems shall be constructed of materials having a flame spread index of not greater than 200.</p> <p>7. Stud wall cavities and the spaces between solid floor joists to be used as air plenums shall comply with the following conditions:</p> <p>7.1. These cavities or spaces shall not be used as a plenum for supply air.</p> <p>7.2. These cavities or spaces shall not be part of a required fire-resistance-rated assembly.</p> <p>7.3. Stud wall cavities shall not convey air from more than one floor level.</p> <p>7.4. Stud wall cavities and joist-space plenums shall be isolated from adjacent concealed spaces by tight-fitting fireblocking in accordance with Section R602.8 <u>R302.11</u>. <u>Fireblocking materials used for isolation shall comply with Section R302.11.1.</u></p> <p>7.5. Stud wall cavities in the outside walls of building envelope assemblies shall not be utilized as air plenums.</p> <p>8. Volume dampers, equipment and other means of supply, return and exhaust air adjustment used in system balancing shall be provided with access.</p> <p>M1601.4.5 Fireblocking. Duct installations shall be fireblocked in accordance with Section R602.8 <u>R302.11</u>.</p>					
RM33-18	M1601.1.1.7 Sealing. Building cavities used as plenums shall be <u>sealed</u> .			X	Sealing \$2.00 Sqft.	Necessary addition for clarification
RM34-18	M1802.4 Blocked vent switch. The venting system for oil Oil-fired appliances shall be equipped with a device that will stop burner operation in the event that the venting system is obstructed. Such			X	\$150 per unit	Clarification

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Table 6. 2021 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2021 IRC MECHANICAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE															
		Decrease	None	Increase																	
Sub Code:																					
	device shall have a manual reset, and shall be installed in accordance with the manufacturer's instructions.																				
RM35-18	M2101.14 Preparation of pipe ends. Pipe shall be cut square, reamed, and shall be free of burrs and obstructions. CPVC, PE, and PVC pipe shall be chamfered. Pipe ends shall have full-bore openings and shall not be undercut. be prepared in accordance with the pipe manufacturer's instructions.		X			Clarification															
RM36-18	TABLE M2105.4 GROUND-SOURCE LOOP PIPE		X			Clarification															
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Table 6. 2021 IRC Mechanical Changes Cost Impact

CODE CHANGE #	2021 IRC MECHANICAL CHANGES SUMMARY		IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		F439; ASTM F1970; CSA B137.6					
	Cross-linked polyethylene (PEX)	ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2159; ASTM F2434; CSA B137.5; <u>CSA C448</u>					
	High-density polyethylene (HDPE)	ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1; <u>CSA C448</u> ; NSF 358-1					
	Polyethylene/aluminum/polyethylene (PE-AL-PE)	ASTM F1282; ASTM F2434; CSA B137.9					
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RM39-18	TABLE M2105.4 GROUND-SOURCE LOOP PIPE			X			Clarification
	MATERIAL	STANDARD					
	Chlorinated polyvinyl chloride (CPVC)	ASTM D2846; ASTM F437; ASTM F438; ASTM F439; ASTM F441; ASTM F442; CSA B137.6					
	Cross-linked polyethylene (PEX)	ASTM F876; CSA B137.5					

DRAFT

Table 6. 2021 IRC Mechanical Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	High-density polyethylene (HDPE)	ASTM D2737; ASTM D3035; ASTM F714; AWWA C901; CSA B137.1; CSA C448; NSF 358-1				
	Polyethylene/aluminum/polyethylene (PE-AL-PE) pressure pipe	ASTM F1282; AWWA C 903; CSA B137.9				
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RM41-18	<p style="text-align: center;">TABLE M2101.1 HYDRONIC PIPING AND FITTING MATERIALS</p> <p>Reason: ASTM's committee on plastics piping recently completed a new Standard, F3253 - Standard Specification for Crosslinked Polyethylene (PEX) Tubing with Oxygen Barrier for Hot - and Cold - Water Hydronic Distribution Systems. This new system standard covers both the oxygen barrier PEX tubing as well as the performance and material requirements for the fittings. While this standard essentially mirrors the existing ASTM F876 and F877 PEX standards from a dimensional standpoint and existing fittings interchangeability, it also mandates the inclusion of an oxygen barrier layer with defined pass/fail criteria essentially equal with the industry's long accepted norm of DIN 4726 concerning allowed oxygen permeation. This new standard also requires a minimum pull-out strength test for the fittings not included in ASTM F877</p>		X			Offers an alternative that uses products which are relatively identical in cost to existing pipe and fitting materials.															

DRAFT

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	<p>today. The inclusion of this new standard in no way changes the acceptance of the existing ASTM F876 and F877 which will remain in the mechanical hydronics code for the foreseeable future.</p> <p>This standard's project has been in works for nearly 4 years and represents the work and input from nearly all of the PEX tubing manufacturers in North America. Your support of this proposal is most appreciated.</p> <p>A similar proposal is being submitted for Chapter 12 of the IMC.</p>					
RM42-18	<p>M2105.7 Preparation of pipe ends. Pipe shall be cut square, reamed, and shall be free of burrs and obstructions. CPVC, PE and PVC pipe shall be chamfered. Pipe ends shall have full-bore openings and shall not be undercut. <u>be prepared in accordance with the pipe manufacturer's instructions.</u></p>		X			Clarification
RM43-18	<p>M2202.1 Materials. Piping shall consist of steel pipe, copper and copper-alloy pipe and tubing, <u>steel tubing conforming to ASTM A539 or stainless steel tubing conforming to ASTM A254 or ASTM A539.</u> A269. Aluminum tubing shall not be used between the fuel-oil tank and the burner units.</p>		X			Clarification
RM45-18	<p>M2202.2 Joints and fittings. Piping shall be connected with standard fittings compatible with the piping material. Cast-iron fittings shall not be used for oil piping. Unions requiring gaskets or packings, right or left couplings, and sweat fittings employing solder having a melting point less than 1,000°F (538°C) shall not be used for oil piping. Threaded joints and connections shall be made tight with a lubricant or pipe thread compound.</p>		X			Clarification

DRAFT

APPENDIX G

Table 7. 2021 IRC Plumbing Changes Cost Impact						
CODE CHANGE #	2021 IRC PLUMBING CHANGE SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RP2-18	<p>P2503.5.1 Rough plumbing. DWV systems shall be tested on completion of the rough piping installation by water or, for piping systems other than plastic, by air, without evidence of leakage. Either test shall be applied to the drainage system in its entirety or in sections after rough-in piping has been installed, as follows:</p> <ol style="list-style-type: none"> 1. Water test. Each section shall be filled with water to a point not less than 5 <u>10</u> feet (1524 <u>3048</u> mm) above the highest fitting connection in that section, or to the highest point in the completed system. Water shall be held in the section under test for a period of 15 minutes. The system shall prove leak free by visual inspection. 2. Air test. The portion under test shall be maintained at a gauge pressure of 5 pounds per square inch (psi) (34 kPa) or 10 inches of mercury column (34 kPa). This pressure shall be held without introduction of additional air for a period of 15 minutes. 		X			Provides the benefit of a more stringent test, subjecting the piping to more pressure.
RP4-18	<p>Add the following: <u>P2709.4.1 Waste Fittings.</u> Flanged drains shall conform to ASME A112.18.2/CSA B125.2.</p>		X			Necessary addition for clarification
RP5-18	<p>P2904.2.1 Temperature rating and separation from heat sources. Except as provided for in Section P2904.2.2, sprinklers shall have a temperature rating of not less than 135°F (57°C) and not more than 170°F (77°C) <u>225°F (107°C)</u>. Sprinklers shall be separated from heat sources as required by the sprinkler manufacturer's installation instructions.</p>		X			Allows flexibility.
RP6-18	<p>P2904.2.3 Freezing areas. Piping shall be protected from freezing as required by Section P2603.5 or by using <u>one of the following:</u></p> <ol style="list-style-type: none"> 1. A dry pipe automatic sprinkler system that is listed for residential occupancy applications. 2. Where sprinklers are required in areas that are subject to freezing, a Dry-side-wall or dry-pendent sprinklers extending from a nonfreezing area into a freezing area shall be installed. 		X			Additional alternative to existing requirements for freeze protection
RP7-18	<p>P2904.3.2 Shutoff valves prohibited. With the exception of shutoff valves for the entire water distribution system <u>or a single master control valve for the automatic sprinkler system that is locked in the open position</u>, valves shall not be installed in any location where the valve would isolate piping serving one or more sprinklers.</p>		X			Adds an allowance to have a master control valve.
RP8-18	<p>P2904.4.1.3 Other Ceiling Configurations. For ceiling configurations not addressed by Sections P2904.4.1.1 or P2904.4.1.2, the flow rate shall be subject to approval by the fire code official.</p>	X			Minimal	Correlates with NFPA 13D and existing installation

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Sub Code:																																																																								
									practices for residential sprinklers protecting spaces with sloped and/or beamed ceilings.																																																															
RP9-18	<p style="text-align: center;">TABLE P2904.6.2(2) MINIMUM WATER METER PRESSURE LOSS (PLm)^a</p> <table border="1"> <thead> <tr> <th>FLOW RATE(gallons per minute, gpm)^b</th> <th>³/₈-INCH METER PRESSURE LOSS (pounds per square inch, psi)</th> <th>³/₄-INCH METER PRESSURE LESS(pounds per square inch, psi)</th> <th>1-INCH METER PRESSURE LOSS (pounds per square inch, psi)</th> </tr> </thead> <tbody> <tr><td>8</td><td>2-3</td><td>1-3</td><td>1</td></tr> <tr><td>10</td><td>3</td><td>1-3</td><td>1</td></tr> <tr><td>12</td><td>4</td><td>1-3</td><td>1</td></tr> <tr><td>14</td><td>5-6</td><td>2-5</td><td>1</td></tr> <tr><td>16</td><td>7</td><td>3-6</td><td>1</td></tr> <tr><td>18</td><td>9</td><td>4-7</td><td>1-2</td></tr> <tr><td>20</td><td>11</td><td>4-9</td><td>2</td></tr> <tr><td>22-23</td><td>NP-14</td><td>5-11</td><td>2-3</td></tr> <tr><td>24</td><td>NP</td><td>5</td><td>2</td></tr> <tr><td>26</td><td>NP-18</td><td>6-14</td><td>2-3</td></tr> <tr><td>28</td><td>NP</td><td>6</td><td>2</td></tr> <tr><td>30-31</td><td>NP-26</td><td>7-22</td><td>2-4</td></tr> <tr><td>32-39</td><td>NP-38</td><td>7-35</td><td>3-6</td></tr> <tr><td>34</td><td>NP</td><td>8</td><td>3</td></tr> <tr><td>36-52</td><td>NP</td><td>8-NP</td><td>3-10</td></tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm, 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 0.063 L/s. NP = Not permitted unless the actual water meter pressure loss is known.</p> <p>a. Table P2904.6.2(2) establishes conservative values for water meter pressure loss or installations where the water meter loss is unknown. Where the actual water meter pressure loss is known, P_m shall be the actual loss.</p> <p>b. Flow rate from Section P2904.4.2. Add 5 gpm to the flow rate required by Section P2904.4.2 where the water service pipe supplies more than one dwelling.</p>				FLOW RATE(gallons per minute, gpm) ^b	³ / ₈ -INCH METER PRESSURE LOSS (pounds per square inch, psi)	³ / ₄ -INCH METER PRESSURE LESS(pounds per square inch, psi)	1-INCH METER PRESSURE LOSS (pounds per square inch, psi)	8	2-3	1-3	1	10	3	1-3	1	12	4	1-3	1	14	5-6	2-5	1	16	7	3-6	1	18	9	4-7	1-2	20	11	4-9	2	22-23	NP-14	5-11	2-3	24	NP	5	2	26	NP-18	6-14	2-3	28	NP	6	2	30-31	NP-26	7-22	2-4	32-39	NP-38	7-35	3-6	34	NP	8	3	36-52	NP	8-NP	3-10		X		Revises the water meter table in the IRC to better correlate with the water meter table in NFPA 13D, which was updated in the 2013 edition based on research that was published in an Fire Protection Research Foundation Report titled, " Residential Fire Sprinklers - Water Usage and Water Meter performance Study" in 2011.
FLOW RATE(gallons per minute, gpm) ^b	³ / ₈ -INCH METER PRESSURE LOSS (pounds per square inch, psi)	³ / ₄ -INCH METER PRESSURE LESS(pounds per square inch, psi)	1-INCH METER PRESSURE LOSS (pounds per square inch, psi)																																																																					
8	2-3	1-3	1																																																																					
10	3	1-3	1																																																																					
12	4	1-3	1																																																																					
14	5-6	2-5	1																																																																					
16	7	3-6	1																																																																					
18	9	4-7	1-2																																																																					
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22-23	NP-14	5-11	2-3																																																																					
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36-52	NP	8-NP	3-10																																																																					
RP10-18	P2905.3 Hot water supply to fixtures. The developed length of hot water piping, from the source of hot water to the fixtures that require hot water, shall not exceed 50 <u>100</u> feet (15 240 mm). Water heaters					X		Increases the hot water supply line																																																																

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Table 7. 2021 IRC Plumbing Changes Cost Impact

CODE CHANGE #	2021 IRC PLUMBING CHANGE SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	and recirculating system piping shall be considered to be sources of hot or tempered water.					length from the source of hot water to the fixtures that require hot or tempered water.
RP11-18	P2906.21 Push-fit joints. Push-fit joints shall be used only on copper-tube-size outside diameter dimensioned CPVC, PEX, PE-RT, and copper tubing. Push-fit joints shall conform to ASSE 1061 and shall be installed in accordance with the manufacturer's instructions.		X			Clarification.
RP12-18	P2909.1 Design. Drinking water treatment units shall meet the requirements of NSF42, NSF 44, NSF 53, NSF 60 <u>62</u> or CSA B483.1.		X			Creates additional option for water treatment.
RP15-18	TABLE AG101.1 PLASTIC PIPING STANDARDS FOR VARIOUS APPLICATIONS^{a, b} Reason: This change is to add CSA B137.18 to the various applications in Table AG 101.1. CSA B137.18 is already included in the I Codes and is referenced in Chapter 44 - Reference Standards of the 2018 IRC.		X			Adds CSA B137.18 to the various applications in Table AG 101.1.

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APPENDIX H

Table 8. 2020 NEC Changes Cost Impact							
CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
	Article 90	Introduction					
SR-7891	090.2(A)	NEC covers power exported from vehicles to premises		X			Clarification
FR-8206	090.2(A)	NEC covers shore power to ships and watercraft		X			Clarification
FR-8370	090.2(A)(5)	NEC covers shore power to ships and watercraft		X			Clarification
SR-7899	090.2(B)	NEC does not cover automotive vehicles		X			Clarification
FR-8764	090.6	Editorial		X			Clarification
	CHAPTER 1	GENERAL					
	Article 100	Definitions					
SR-7876	100	AC Module System.		X			Clarification
FR-8304	100	Accessible (as applied to equipment).		X			Clarification
FR-8517	100	Alternating-Current (ac) Module		X			Clarification
SR-7873							
FR-8519	100	Array.		X			Clarification
SR-7594	100	Bathroom.		X			Clarification
FR-7662	100	Bathroom.		X			Clarification
SR-7553	100	Battery.		X			Clarification
SR-7885	100	Bipolar Circuits.		X			Clarification
FR-8521	100	Bipolar Photovoltaic Array.		X			Clarification
SR-7797	100	Bonding Jumper, Main.		X			Clarification
FR-8070	100	Bonding Jumper, Main.		X			Clarification
SR-7933	100	Cable Bundle.		X			Clarification
SR-7582	100	Cable Sheath.		X			Clarification
FR-8807	100	Circuit Integrity (CI) Cable.		X			Clarification
FR-8804	100	Class 1 Circuit.		X			Clarification
FR-8805	100	Class 2 Circuit.		X			Clarification
FR-8806	100	Class 3 Circuit.		X			Clarification
FR-8403	100	Closet Storage Space.		X			Clarification
FR-7523	100	Coaxial Cable.		X			Clarification
SR-7585	100	Communications Circuit.		X			Clarification
FR-7657	100	Communications Circuit.		X			Clarification
FR-7524	100	Communications Raceway.		X			Clarification

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Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7589	100	Communications Service Provider		X			Clarification
FR-7525	100	Composite Optical Fiber Cable.		X			Clarification
FR-7526	100	Conductive Optical Fiber Cable.		X			Clarification
SR-7538	100	Controller.		X			Clarification
FR-8187	100	Coordination, Selective (Selective Coordination...		X			Clarification
FR-7860	100	Copper-Clad Aluminum Conductors.		X			Clarification
SR-8036	100	Corrosive Environment.		X			Clarification
SR-7887	100	DC-to-DC Converter Output Circuit		X			Clarification
FR-8522	100	DC-to-DC Converter Output Circuit.		X			Clarification
FR-8938	100	DC-to-DC Converter.		X			Clarification
SR-7892	100	Direct-Current (dc) Combiner.		X			Clarification
FR-8525	100	Direct-Current (dc) Combiner.		X			Clarification
FR-8755	100	Diversion Charge Controller.		X			Clarification
FR-7515	100	Dust-Ignitionproof [as applied to Hazardous (Classified) Locations		X			Clarification
FR-7516	100	Dust tight.		X			Clarification
FR-7719	100	Electric Power Production and Distribution Network.		X			Clarification
SR-7787	100	Electric Vehicle Connector.		X			Clarification
SR-7783	100	Electric Vehicle Power Export Equipment		X			Clarification
SR-7789	100	Electric Vehicle Storage Battery.		X			Clarification
SR-7790	100	Electric Vehicle Supply Equipment		X			Clarification
FR-8397	100	Electric Vehicle Supply Equipment.		X			Clarification
FR-8389	100	Electric Vehicle.		X			Clarification
FR-8915	100	Electrical Datum Plane.		X			Clarification
FR-8527	100	Electrical Production and Distribution Network		X			Clarification
SR-7893	100	Electronic Power Converter.		X			Clarification
FR-8022	100	Electronically Protected (as applied to motors)		X			Clarification
SR-7542	100	Electronically Protected (as applied to motors)		X			Clarification
FR-7747	100	Encapsulation		X			Clarification
FR-8335	100	Equipment Rack.		X			Clarification
SR-7718	100	Equipotential Plane.		X			Clarification

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Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8916	100	Equipotential Plane.		X			Clarification
SR-7764	100	Example D5(b) Optional Calculation for Multifamily		X			Clarification
FR-7971	100	Example D7 Sizing of Service Conductors for Dwelling		X			Clarification
FR-7518	100	Explosionproof Equipment.		X			Clarification
FR-8420	100	Fastened in Place.		X			Clarification
FR-8190	100	Fault Current		X			Clarification
FR-8191	100	Fault Current, Available		X			Clarification
SR-7950	100	Fault Current.		X			Clarification
SCR-14	100	Feeder		X			Clarification
FR-8464	100	Feeder Assembly.		X			Clarification
SCR-19	100	Feeder Neutral		X			Clarification
SR-7596	100	Feeder Neutral Conductor		X			Clarification
FR-8069	100	Feeder Neutral Conductor		X			Clarification
FR-9003	100	Feeder Short-Circuit and Ground-Fault Protection		X			Clarification
FR-8332	100	Field Evaluation Body (FEB).		X			Clarification
FR-8338	100	Field Labeled (as applied to evaluated products...		X			Clarification
SCR-72	100	Fitting		X			Clarification
SR-7928	100	Fitting.		X			Clarification
FR-8342	100	Fitting.		X			Clarification
FR-7749	100	Flameproof		X			Clarification
SR-8044	100	Fountain.		X			Clarification
FR-8731	100	Fountain.		X			Clarification
FR-7861	100	Free Air		X			Clarification
SR-7572	100	Free Air (as applied to conductors)		X			Clarification
FR-8986	100	Fuel Cell System.		X			Clarification
FR-8985	100	Fuel Cell.		X			Clarification
FR-8734	100	Functional Grounded PV System.		X			Clarification
SR-7655	100	Functional Grounded.		X			Clarification
SR-7773	100	Further Demand Factor		X			Clarification
SR-7862	100	Generating Capacity, Inverter.		X			Clarification
FR-8532	100	Generating Capacity.		X			Clarification
FR-8947	100	Generating Capacity.		X			Clarification

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Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7804	100	Grounded Conductor.		X			Clarification
SR-8127	100	Grounded, Functionally.		X			Clarification
SR-7738	100	Ground-Fault Circuit Interrupter		X			Clarification
FR-7599	100	Ground-Fault Current Path.		X			Clarification
SR-7805	100	Grounding Conductor, Equipment		X			Clarification
FR-7602	100	Grounding Conductor, Equipment (EGC).		X			Clarification
FR-7666	100	Habitable Room		X			Clarification
SCR-15	100	Habitable Room		X			Clarification
SR-8049	100	Immersion Pool.		X			Clarification
SCR-58	100	Impedance Heating		X			Clarification
FR-7751	100	Increased Safety "e"		X			Clarification
SCR-22	100	Information Technology		X			Clarification
SR-7835	100	Information Technology Equipment Room		X			Clarification
FR-8531	100	Interactive Inverter Output Circuit.		X			Clarification
FR-8590	100	Interactive Inverter Output Circuit.		X			Clarification
SR-7545	100	Interactive Inverter.		X			Clarification
FR-7750	100	Interactive Inverter.		X			Clarification
FR-8536	100	Interactive System.		X			Clarification
FR-8987	100	Interactive System.		X			Clarification
FR-7753	100	Intrinsic Safety "I"		X			Clarification
FR-7684	100	Intrinsically Safe Circuit		X			Clarification
FR-8652	100	Invasive Procedure.		X			Clarification
SR-7564	100	Inverter Input Circuit		X			Clarification
FR-8983	100	Inverter Input Circuit.		X			Clarification
SR-7567	100	Inverter Output Circuit		X			Clarification
FR-8492	100	Inverter Output Circuit.		X			Clarification
FR-8984	100	Inverter Output Circuit.		X			Clarification
FR-8982	100	Inverter.		X			Clarification
SR-7953	100	Labeled.		X			Clarification
FR-8360	100	Labeled.		X			Clarification
FR-7682	100	Laundry Area		X			Clarification
SCR-16	100	Laundry Area		X			Clarification
SR-8141	100	Laundry Area.		X			Clarification
SR-7877	100	Limited Care Facility.		X			Clarification

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Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7502	100	Luminaire, Directly Controlled.		X			Clarification
FR-8214	100	Machinery Space (for Elevator, Dumbwaiter).		X			Clarification
FR-8988	100	Maximum System Voltage.		X			Clarification
FR-8656	100	Medical Office (Dental Office).		X			Clarification
FR-7864	100	Messenger or Messenger Wire		X			Clarification
SR-7573	100	Messenger or Messenger Wire.		X			Clarification
SR-8146	100	Microgrid Interconnect Device		X			Clarification
FR-8592	100	Microgrid Interconnect Device (MID).		X			Clarification
FR-8593	100	Microgrid System.		X			Clarification
SR-7902	100	Module.		X			Clarification
FR-8550	100	Module.		X			Clarification
SR-7903	100	Monopole Subarray Circuit.		X			Clarification
FR-8549	100	Monopole Subarray.		X			Clarification
FR-7766	100	Move definitions from 5xx.2 sections		X			Clarification
SR-7867	100	Multimode Inverter.		X			Clarification
FR-8551	100	Multimode Inverter.		X			Clarification
FR-8595	100	Multimode Inverter.		X			Clarification
FR-7808	100	Network-Powered Broadband Communications Circuit		X			Clarification
SR-8194	100	New Definition: Attachment Fitting		X			Clarification
SR-7671	100	New Definition: Reconditioned		X			Clarification
SR-7992	100	New Definition: Reconditioned		X			Clarification
SR-8074	100	New Definition: Reconditioned		X			Clarification
FR-7761	100	New Part III for Hazardous location definitions		X			Clarification
SR-7935	100	Nominal Current.		X			Clarification
FR-7528	100	Nonconductive Optical Fiber Cable.		X			Clarification
FR-7754	100	Oil Immersion "o"		X			Clarification
FR-7529	100	Optical Fiber Cable.		X			Clarification
FR-8991	100	Output Circuit.		X			Clarification
FR-8193	100	Overload.		X			Clarification
FR-8552	100	Panel.		X			Clarification
SR-7551	100	Part-Winding Motors.		X			Clarification
FR-7965	100	Part-Winding Motors.		X			Clarification
FR-8553	100	Photovoltaic (PV) System.		X			Clarification

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Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7910	100	Photovoltaic Output Circuit.		X			Clarification
FR-8559	100	Photovoltaic Output Circuit.		X			Clarification
SR-7920	100	Photovoltaic Power Source.		X			Clarification
FR-8563	100	Photovoltaic Power Source.		X			Clarification
SR-8129	100	Photovoltaic Source Circuit.		X			Clarification
FR-8555	100	Photovoltaic Source Circuit.		X			Clarification
SR-8130	100	Photovoltaic System DC Circuit.		X			Clarification
FR-8557	100	Photovoltaic System DC Circuit.		X			Clarification
SCR-26	100	Pier		X			Clarification
SR-7716	100	Pier.		X			Clarification
FR-8989	100	Point of Common Coupling.		X			Clarification
FR-7755	100	Powder Filling "q"		X			Clarification
SR-8125	100	Power Production Equipment.		X			Clarification
FR-8598	100	Power Production Equipment.		X			Clarification
SR-8147	100	Power Source Output Circuit.		X			Clarification
FR-8808	100	Power-Limited Tray Cable (PLTC).		X			Clarification
FR-7862	100	Premises Community Antenna Television (CATV) Circuit		X			Clarification
FR-7756	100	Pressurization "p"		X			Clarification
SR-7791	100	Primary Pad.		X			Clarification
FR-7886	100	Prime Mover		X			Clarification
SR-7549	100	Prime Mover.		X			Clarification
FR-8101	100	Protection by Encapsulation "m"		X			Clarification
FR-7731	100	Protection by Enclosure "t"		X			Clarification
FR-8381	100	Qualified Person.		X			Clarification
SR-8223	100	Receptacle.		X			Clarification
FR-8246	100	Receptacle.		X			Clarification
SR-8072	100	Reconditioned		X			Clarification
SR-8227							
SCR-06							
SCR-07							
SCR-09							
FR-8470	100	Recreational Vehicle.		X			Clarification
FR-8758	100	Revision		X			Clarification
SR-8070	100	Service Drop.		X			Clarification
FR-8197							

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Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8068	100	Service Equipment.		X			Clarification
FR-8199							
FR-8195	100	Service.		X			Clarification
SR-7682	100	Service-Entrance Conductor Assembly		X			Clarification
FR-7519	100	Simple Apparatus [as applied to Hazardous (Classified) Locations		X			Clarification
SR-8244	100	Single-Pole Separable Connector.		X			Clarification
FR-8818							
SR-8052	100	Splash Pad.		X			Clarification
SR-8208	100	Stand-Alone (Islanded) Mode.		X			Clarification
SR-8218	100	Stand-Alone System.		X			Clarification
FR-8565							
FR-8728							
FR-8990							
SR-7555	100	Storage Battery.		X			Clarification
FR-8566	100	Subarray.		X			Clarification
SCR-17	100	Surge Arrester		X			Clarification
SCR-18	100	Surge-Protective Device		X			Clarification
SR-7635	100	Switch, Bypass Isolation.		X			Clarification
FR-8981							
SR-7820	100	Technical Power System.		X			Clarification
FR-8337							
SR-7547	100	Thermally Protected (as applied to motors)		X			Clarification
FR-8880	100	Type ITC Instrumentation Tray Cable		X			Clarification
FR-7758	100	Type of Protection "n"		X			Clarification
SR-7874	100	Unclassified Locations.		X			Clarification
SR-7772	100	Ungrounded Feeder Conductors		X			Clarification
SCR-77	100	Move definitions from 555.2		X			Clarification
	Article 110	Requirements for Electrical Installations					
FR-8484	110.12(C)	Relocated power limited cabling requirements from chapters 7 & 8 to Article 110		X			Clarification
SR-8047	110.12(C)						
SR-8059	110.14	copper & copper-clad aluminum are no longer dissimilar materials		X			Clarification

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Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8069	110.14(D)	Clarifications for determining proper torque values for terminal connections		X			Clarification
FR-8510							
FR-8575	110.16(B)	Update 70E references to current edition		X			Clarification
SCR-71	110.21	Revision of definition for "Reconditioned". Requires original listing mark is to be removed as it no longer applies to the reconditioned equipment		X			Clarification
SR-8079	110.21(A)(2)						
FR-8580							
FR-8600	110.22(A)	The label requirement for disconnects does not apply to 1 and 2 family dwellings		X			Clarification
SR-8089	110.24(A)	Clarification to the fault current marking requirements		X			Clarification
FR-8617							
FR-8620	110.24(B)	Clarification to the fault current marking requirements		X			Clarification
FR-8621	110.26(A)	Informational note on hazards of working on energized equipment		X			Clarification
SR-8097							
SR-8098	110.26(A)(3)	The 6" allowance for intrusion of other electrical systems into the working space includes the support structures		X			Clarification
SR-8104	110.26(C)(2)	Requirements are added to 110.26(C)(2) to prevent open equipment doors from impeding the entry to or egress from the working space of large equipment			X	Undetermined	Operator Safety
FR-8653							
FR-8658	110.26(C)(3)	Add clarity regarding appropriate fire door hardware		X			Clarification
SR-8105	110.26(D)	Clarifies requirement to not use automatic controls for illumination of working spaces		X			Clarification
FR-8661	110.26(E)(2)	Editorial					Editorial
SR-8109	110.28	The new informational notes add clarity relative to installing enclosure types in the specified environments.		X			Clarification
FR-8672							
FR-8765	110.3(A)	Editorial		X			Editorial
FR-8392	110.3(B)	As a result of the change to 424.19 to "lockable", there is an editorial		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
		rearrangement to eliminate redundancy.				
FR-8766	110.30	Editorial		X		Editorial
FR-8763	110.31	Update the edition of ANSI/IEEE C2 to 2017		X		Clarification
SR-8110	110.31(A)(4)	Editorial		X		Editorial
FR-8682						
SR-8111	110.31(A)(5)	Updated referenced edition of standard ANSI/ASTM E119.		X		Clarification
FR-8686	110.32	The word “or” is changed to “and” to require both conditions because it is a combination of height and width that creates the work space.		X		Clarification
SR-8114	110.33(A)(3)	This revision will add clarity regarding appropriate hardware.		X		Clarification
FR-8689						
SR-8116	110.40	Editorial		X		Editorial
SR-8027	110.5	Added copper-clad aluminum to conductor types		X		Clarification
FR-8767	110.51(A)	Editorial		X		Editorial
FR-8768	110.70	Editorial		X		Editorial
	CHAPTER 2	WIRING AND PROTECTION				
	Article 200	Use and Identification of Grounded Conductors				
FR-7631	200.10(B)	Clarified that the silver screw is used for the grounding terminal		X		Clarification
FR-7614	200.3	Editorial		X		Editorial
FR-7624	200.6(A)	Editorial		X		Clarification
SR-7807						
FR-7587	210.6(C)	Clarification of rules for 277V lighting		X		Clarification
SR-7530						
FR-7625	200.6(E)	Editorial		X		Editorial
SR-7808						
SR-7810						
FR-7629	200.9	Editorial		X		Editorial
SR-7813						
	Article 210	Branch Circuits				
FR-7688	210.1	New Definition: Dormitory		X		Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7515	210.2	New Definition: Dormitory Unit		X			Clarification
SR-7525	210.5(C)(1)	Editorial		X			Editorial
FR-7863	210.8	Editorial		X			Editorial
SR-7685	210.8	Editorial		X			Editorial
FR-8119	210.8(A)	Editorial		X			Editorial
FR-8122	210.8(A)	Editorial		X			Editorial
FR-7705	210.8(A)	Adds 250V receptacles and removes amperage limitations for GFCI protection for dwellings			X	Varies: 50 Amp 2 pole CB +\$125	Occupant safety
FR-8120	210.8(A)(5)	GFCI added for finished as well as unfinished basements as all dwelling basements are prone to moisture and flooding			X	\$15/ recep	Occupant safety
SR-7697	210.8(A)						
FR-8121	210.8(A)(11)	GFCI added for indoor damp and wet locations of dwellings			X	\$15/ recep	Occupant safety
FR-8123	210.8(B)	Editorial		X			Editorial
FR-8128	210.8(B)	Editorial		X			Editorial
SR-7724	210.8(B)	Editorial		X			Editorial
FR-7791	210.8(B)	Editorial		X			Editorial
FR-8129	210.8(B)(2)	Clarifies definition of commercial kitchen		X			Clarification
FR-8124	210.8(B)(8)	GFCI added for accessory buildings of nondwellings			X	\$15/ recep	Occupant safety
FR-8125	210.8(B)(10)	Editorial		X			Editorial
FR-8126	210.8(B)(11)	GFCI added for laundry areas of nondwellings			X	\$15/ recep	Occupant safety
FR-8127	210.8(B)(12)	GFCI added for locations within 6 feet of a bathtub or shower in a non-dwelling			X	\$15/ recep	Occupant safety
SR-7733	210.8(C)	GFCI for boat hoists moved to 555.9		X			Clarification
FR-7852	210.8(D)	The GFCI requirement for dishwashers was moved to 422.		X			Clarification
SR-7587	210.8(E)	GFCI required for receptacles for equipment requiring servicing in non-dwellings			X	\$15/ recep	Occupant safety
SR-7737	210.8(E)	Editorial		X			Editorial

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7689	210.8(E)	Editorial		X			Editorial
SR-7676	210.8(F)	Adds 250V receptacles and removes amperage limitations for GFCI protection.					Clarification
FR-7547	210.11(C)(3)	Clarifies that a dedicated circuit is required for bathroom outlets		X			Clarification
FR-7549	210.11(C)(4)	Clarifies that the garage receptacle must be supplied by a 20A circuit		X			Clarification
FR-8131	210.12	Informational note edited		X			Editorial
SR-8245	210.12(A)	Item 5: Clarifies the metal raceway requirement for AFCIs		X			Clarification
FR-8130	210.12(A)	Exception: Clarifies the metal raceway requirement for AFCIs		X			Clarification
FR-7977	210.12(C)	Adds AFCI protection to patient sleeping rooms in nursing homes and limited care facilities			X	\$50/ circuit	Occupant safety
FR-7963	210.12(D)	Add AFCI protection to guest rooms and suites for renovations			X	\$50/ circuit	Occupant safety
FR-8132	210.12(D)	Exception: AFCI protection not required for modifications where conductors are less than 6'		X			Clarification
FR-8106	210.13	Editorial		X			Editorial
SR-7657	210.15	GFCI and AFCI equipment cannot be reconditioned		X			Occupant safety
FR-7981	210.19(A)(1)	Clarification		X			Clarification
SR-7752							
SCR-13							
FR-7984	210.19(A)(3)	Clarification		X			Clarification
FR-9004	210.19(A)	Editorial		X			Editorial
FR-7517	210.25(B)	Informational note to clarify definition of a common area in a multioccupant building		X			Clarification
FR-7619	210.50	Editorial		X			Editorial
SR-7601	210.52	Editorial		X			Editorial
FR-7520	210.52(B)(1)	Clarification		X			Clarification
FR-7521	210.52(C)			X			
SR-7644							

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
SR-8246		Clarification to the spacing of receptacles on countertops and peninsulas				
FR-7537	210.52(C)(1), 210.52(C)(2), 210.52(C)(3)					
SR-8247	210.52			X		Clarification
FR-7598	210.52(E)(3)	Clarifies the definition of an attached deck		X		Clarification
FR-7604	210.52(G)	Adds receptacle requirement to garages in multifamily dwellings			X	\$75/ garage Occupant convenience
FR-7849	210.60	Editorial		X		Editorial
FR-7588	210.63, 210.64	Receptacles for servicing equipment must be on the same level as equipment for outdoor installations, and within the same room for indoor installations.		X		Safety
SR-7566	210.63					
FR-7593	210.65	Editorial		X		Editorial
FR-7589	210.70(A)(1)	Clarifies rules on required light switches and allows for remote controlled/wireless systems to be used		X		Clarification
FR-7590	210.70(A)(2)					
FR-7591	210.70(A)(3)					
FR-7592	210.70(B)					
FR-7612	210.70(C)					
	Article 215	Feeders		X		
FR-8269	215.2(A)	Editorial		X		Editorial
FR-8270	215.2(B)	Editorial		X		Editorial
FR-8271	215.3	Editorial		X		Editorial
FR-8272	215.6	Editorial		X		Editorial
FR-8273	215.9	Removed limitation of 15 and 20 amp for GFCI protection		X		Clarification
FR-8361	215.10	Temporary feeders used during repair, maintenance, and emergencies do not have to use GFCI is used for less than 90 days		X		Clarification
SR-7858	215.10	Editorial		X		Editorial
	Article 220	Branch-Circuit, Feeder, and Service Load Calculations				

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8104	220.11	New section: clarifies how to calculate floor area		X			Clarification
FR-8075	220.12	Revised Table 220.12 to modify lighting loads used for load calculations to use values and classifications that align with ASHRAE 90.1. Most load values decreased, four increased.	X			Varies	Lower cost
FR-8076	220.14(J)	Revised: lighting loads for dwellings moved from Table 220.12 to this section.		X			Clarification
SR-7754							
FR-8077	220.14(K)	Removed the load "Banks" as it is now included in "Office Buildings"		X			Clarification
FR-8071	220.14(M)	New Section to reorganize hotel and motel occupancies. Editorial changes only.		X			Clarification
SR-7758							
FR-8079	220.16(A)	Editorial		X			Editorial
FR-8080	220.42	Delete demand factors for hospital lighting. Lighting load values for hospitals have been reduced and these demand factors are no longer accurate.		X			Clarification
SR-7759							
FR-8057	220.53	Adds ovens and cooktops cooking appliances to dwelling unit items that cannot be derated using the 75% demand factor		X			Clarification
SR-7755							
FR-8062	220.60	Clarification		X			Clarification
FR-8081	220.87	Clarification		X			Clarification
SR-7756							
	Article 225	Outside Branch Circuits and Feeders		X			
FR-8678	225.1	Editorial		X			Editorial
SR-7860	225.3	Editorial		X			Editorial
FR-8363	225.4	Editorial		X			Editorial
FR-8366	225.5	Editorial		X			Editorial
FR-8369	225.8	Deleted redundant material		X			Clarification
FR-8274	225.10	Removed multiconductor cable, Added type SE (a multiconductor cable), added type TC-ER		X			Clarification
SR-7863							

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8275	225.15	Clarification		X			Clarification
FR-8276	225.17(A)	Editorial		X			Editorial
FR-8277	225.19	Clarification		X			Clarification
FR-8278	225.22	Relocated to article 300		X			Clarification
SR-7864	225.22	Relocated back to article 225		X			Clarification
FR-8279	225.25	Editorial		X			Editorial
FR-8281	225.30(A)	Added docking facilities and piers to locations where more than one service can be used.		X			Revision
FR-8280	225.30(B)	When multiple feeders originate from a common piece of equipment, but terminate in separate disconnects, the disconnects must be group in one location, and labeled to indicate load served. Not more than six feeders permitted.		X			Safety
SR-7866	225.30	Editorial		X			Editorial
FR-8362	225.32	Editorial		X			Editorial
FR-8364	225.52(B)	Editorial		X			Editorial
FR-8365	225.52(C)	Editorial		X			Editorial
FR-8679	225.60(C)	Editorial		X			Editorial
FR-8680	225.61(B)	Editorial		X			Editorial
	Article 230	Services					
FR-8454	230.11	Created new section for power distribution blocks, then moved it to 230.46		X			Revision
SR-8015							
FR-8451	230.23	Editorial		X			Editorial
FR-8452	230.24(B)	Editorial		X			Editorial
FR-8632	230.28(A)	Editorial		X			Editorial
FR-8453	230.31	Editorial		X			Editorial
FR-8455	230.40	Editorial		X			Editorial
FR-8456	230.42	Editorial		X			Editorial
FR-8457	230.43	Added type TC-ER cable for services		X			Revision
FR-8458	230.44	Added type TC-ER cable for services in cable trays		X			Revision

DRAFT

Table 8. 2020 NEC Changes Cost Impact							
CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7871	230.46	Added provision to tap service conductors (in addition to the splice provision). Added requirement that power distribution blocks be marked "suitable for use on the line side of the service equipment" or equivalent - delayed implementation until January 1, 2023		X			Revision
FR-8459	230.62(C)	New Section: Barriers shall be placed in service equipment such that no uninsulated, ungrounded service busbar or service terminal is exposed to inadvertent contact by persons or maintenance equipment while servicing load terminations.			X	???	Safety
SR-7896							
FR-8460	230.66	Editorial		X			Editorial
SR-7897	230.66(B)	Editorial		X			Editorial
FR-8546	230.67	New Section: Add surge protection to dwelling unit services			X	\$150/200A Service	Protect sensitive electronics such as AFCI, GFCI, and smoke alarms
SR-7898							
FR-8461	230.70	Editorial		X			Editorial
FR-8463	230.71	This revision continues to retain the six service disconnect rule for services. However, to address these challenges, the permission for up to six service disconnects is modified to require installation in separate enclosures.			X	Varies	Eliminate the need to work on energized equipment
SR-7901							

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SCR-33	230.72	Editorial		X			Editorial
FR-8622	230.75	Editorial		X			Editorial
SR-7912	230.82	Editorial		X			Editorial
FR-8627	230.82(1)	Editorial		X			Editorial
FR-8626	230.82(3)	Editorial		X			Editorial
FR-8624	230.82(5)	Editorial		X			Editorial
FR-8625	230.82(6)	PV system can be used as service disconnect if listed for that use		X			Clarification
FR-8623	230.82(10)	New section: Can use the external dwelling disconnect added in 230.85 as service disconnect, if listed for use		X			Clarification
FR-8628	230.82(11)	New section: Meter disconnect can be used as service disconnect, if listed		X			Clarification
FR-8462	230.85	New Section: Requires outdoor accessible mounted emergency disconnects for 1 and 2 family dwellings			X	\$475/ 200 Amp Service	1st Responder Safety
SR-7924							
FR-8629	230.90(A)	Editorial		X			Editorial
FR-8630	230.200	Editorial		X			Editorial
FR-8631	230.205(B)	Editorial		X			Editorial
SR-8065	230.208	Editorial		X			Editorial
	Article 240	Overcurrent Protection					
FR-8633	240.2	Editorial		X			Editorial
FR-8634	240.4	Editorial		X			Editorial
FR-8635	240.5(B)(2)	Clarification		X			Clarification
FR-8636	240.6(C)	Clarification		X			Clarification
SR-7955	240.6(C)	Editorial		X			Editorial
FR-8675	240.13	Editorial		X			Editorial
FR-8676	240.21	Editorial		X			Editorial
SR-7956	240.21(B)	Clarification		X			Clarification
FR-8637	240.23	Deleted: duplicate rules in 220.61		X			Clarification
FR-8638	240.24(A)	Editorial		X			Editorial
SR-7961	240.24(A)	Editorial		X			Editorial
FR-8639	240.24(E)	Editorial		X			Editorial
FR-8669	240.33	Editorial		X			Editorial
SR-8022							

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8640	240.40	Editorial		X			Editorial
SR-7974	240.62	New Section: Low-voltage fuse holders and low-voltage nonrenewable fuses shall not be permitted to be reconditioned.		X			Clarification
FR-8641	240.67(B)	Adds "Current limiting, electronically actuated fuses" as an acceptable method of arc energy reduction		X			Clarification
SR-7991	240.67(A), 240.67(B)	Clarifies the documentation requirement for arc energy reduction method		X			Clarification
SR-8020	240.67(C)	Requires performance testing of arc energy reduction systems, whenever such systems are required.			X	\$1,000 / test	Clarification
FR-8642	240.86	Editorial		X			Editorial
FR-8643	240.86(C)	Editorial		X			Editorial
SR-7999	240.87(A), 240.87(B)	Clarifies the documentation requirement for arc energy reduction method		X			Clarification
FR-8671	240.87(B)	Clarification		X			Clarification
SR-8030	240.87(C)	Requires performance testing of arc energy reduction systems, whenever such systems are required.			X	\$1,000 / test	Safety
SR-8011	240.88	Reconditioned overcurrent devices must be listed as "reconditioned." Clarifies which types of overcurrent devices and components can be reconditioned.		X			Safety
FR-8677	240.90	Editorial		X			Editorial
FR-8673	240.91(B)	Revision		X			Revision
SR-8046	240.91(B)	Editorial		X			Editorial
SR-8048	240.102	New Section: Medium voltage fuse holders and nonrenewable fuses cannot be reconditioned		X			Safety
	Article 242	Overvoltage Protection					
FR-8221	242	New Article: Articles 280 & 285 have been merged into new article 242 to		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8083		provide a single article for clarity and usability					
SCR-34							
SR-8066							
	Article 250	Grounding and Bonding					
FR-8196	250.2	New definition: Disconnect, supply-side (coordinate with new provision 230.85)		X			Clarification
SR-7780		Delete new definition: Disconnect, supply-side		X			Clarification
FR-9007	250.2	Definition moved to article 100		X			Clarification
SR-7815	250.3	Editorial		X			Editorial
FR-7637	250.4	Editorial		X			Editorial
FR-8107	250.6(D)	Editorial		X			Editorial
SR-7817	250.6(D)	Editorial		X			Editorial
FR-7639	250.12	Clarification		X			Clarification
FR-7651	250 Part II	Editorial		X			Editorial
SR-7781							
FR-7643	250.20(B)	Clarification		X			
FR-8061	250.24	Editorial		X			Editorial
SR-7782							
FR-8198	250.25	New section created to cover the requirements of supply-side disconnect (see 230.85)		X			Clarification
SR-7778							
FR-7680	250.26	Editorial		X			Editorial
FR-7685	250.28(A)	Updated bonding jumper materials to include aluminum and copper-clad aluminum		X			Clarification
FR-8108	250.28(C)	Editorial		X			Editorial
FR-8118	250.28(D)(2)	New section created to cover the requirements of supply-side disconnect (see 230.85)		X			Clarification
SR-7784							
FR-8097	250.30	The revised text in the first paragraph of 250.30 clarifies that multiple separately derived systems of the same type connected in parallel are considered to be a single separately derived system		X			Clarification
SR-7785	250.30(A)(2)	Editorial		X			Editorial
FR-7759	250.32(A)	Clarification		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7786							
FR-8109	250.32(D)	Editorial		X			Editorial
FR-7818	250.34	Trailer mounted generators were added to this section because they are similar to vehicle mounted generators and need to be covered.		X			Clarification
FR-7781	250.36	Editorial		X			Editorial
FR-8060	250.53	Revised for clarity		X			Clarification
SR-7818	250.53(C)	Rebar shall not used as a conductor to interconnect the electrodes of grounding electrode systems		X			Clarification
FR-7973	250.64(A)	Revised for clarity		X			Clarification
SR-7775							
SR-7777	250.64(A)(1)	Clarifies conditions for using aluminum grounding electrodes		X			Clarification
FR-7898	250.64(B)(2), 250.64(B)(3)	When PVC conduit is used for physical protection, Schedule 80 is required			X	Minimal	Protect from damage
FR-7980	250.64(E)(1)	The revised text clarifies that cable armor is required to be bonded and grounded.		X			Clarification
FR-7902	250.64(E)(3)	This revision makes it clear that the bonding jumper size is determined by the largest grounding electrode conductor installed		X			Clarification
SR-7825	250.66	Editorial		X			Editorial
FR-7985	250.68(C)	Clarification on use of rebar as a grounding electrode		X			Clarification
FR-7920	250.92(B)	Editorial		X			Editorial
SR-7838	250.94(A)	Editorial		X			Editorial
FR-8110	250.96(B)	Editorial		X			Editorial
SR-7794	250.96(B)	Editorial		X			Editorial
FR-7990	250.98	Expansion deflection and deflection fittings were added to the list of fittings required to be made electrically continuous.		X			Clarification
FR-8111	250.102(B)	Editorial		X			Editorial
FR-8031	250.104(A)(1)	Editorial		X			Editorial

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8033	250.104(A)(3)	Editorial		X			Editorial
SR-7795	250.104(B)	Editorial		X			Editorial
FR-8034	250.104(C)	Editorial		X			Editorial
FR-8035	250.104(D)(1), 250.104(D)(2)	The change that was made as a result of changing the reference from Table 250.66 to Table 250.102(C)(1) in the 2017 cycle resulted in an inadvertent increase in the bonding conductor size.		X			Clarification
FR-8038	250.106	Editorial		X			Editorial
SR-7839	250.109	New Section: Metal Enclosures can be used as a ground-fault path	X			Minimal	Clarification
FR-8039	250.112(K)	Revised for clarity		X			Clarification
FR-8040	250.114	Revised for clarity		X			Clarification
FR-8041	250.118	Revised for clarity		X			Clarification
SR-7840	250.119	Revised the dc threshold to 60 volt to be consistent with the current use for PoE circuits		X			Clarification
FR-8043	250.119(B)	Revised for clarity		X			Clarification
SR-7774	250.120(B)	Revised for clarity where aluminum or copper-clad aluminum conductors can be used		X			Clarification
FR-7544	250.121	Revised for clarity		X			Clarification
SR-7757							
FR-8114	250.122	Minor revisions to table 250.122 for selection of equipment grounding conductor along with revisions for clarity		X			Clarification
SR-7760							
SCR-05							
FR-7527	250 Part VII	Revised for clarity		X			Clarification
SR-7841	250.132	Revised for clarity		X			Clarification
FR-7541	250.134	Revised for clarity		X			Clarification
FR-7542	250.136	The sentence that prohibits the use of the metal frame of a building as an equipment grounding conductor is moved to 250.121		X			Safety
SR-7842	250.138	Revised for clarity		X			Clarification
FR-7545	250.142(A)	Editorial		X			Editorial
SR-7843							

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7548 SR-7845	250.142(B)	Exception No. 3 is removed because 250.164 does not specifically address making a grounded conductor connection on the load side of the disconnecting means.		X			Clarification
FR-7654	250.146	Revised for clarity		X			Clarification
SR-7844	250.146(D)	Revised for clarity		X			Clarification
FR-8115	250.148	Section 250.148(E) is deleted because it is already required by 250.8(B).		X			Clarification
SR-7846	250.148						
FR-8112	250.168	Revised for clarity		X			Clarification
FR-7566	250.174(C)	Revised for clarity		X			Clarification
FR-7568 SR-7847	250.176	Revised for clarity		X			Clarification
FR-8113	250.180	Revised for clarity		X			Clarification
FR-7814	250.184(A)(1)	Exception No. 1 does not apply to single-point grounded systems since bare underground neutral conductors would be grounded a multiple locations.		X			Clarification
FR-7819	250.184(C)	The NESC recently revised their language to allow long cable runs such as those for wind farms and solar farms to still be considered multi-point grounded but not held to the 400 m (1300 ft) maximum length between bonding of the neutral conductor to a grounding electrode. The reasoning is that removing the cable jacket only to create a point for bonding creates a less desirable condition than allowing further space between bonds. Removing the jacket creates a weak spot in the cable that could lead to premature cable failure, and the bonding is also bonding to the shielding material potentially affecting the shielding of the cables that could allow for undesirable EMF to occur at the point where this would occur.		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7820	250.187	Revised for clarity		X			Clarification
SR-7848	250.187(B)	Revised for clarity		X			Clarification
	Article 280	Surge Arresters, Over 1000 Volts (Relocated)					
	Article 285	Surge-Protective Devices (SPDs), 1000 Volts or Less (Relocated)					
FR-8116	280, 285	New Article: Articles 280 & 285 have been merged into new article 242 to provide a single article for clarity and usability		X			Clarification
	CHAPTER 3	WIRING METHODS AND MATERIALS					
	Article 310	Conductors for General Wiring					
FR-8649	300.3(B)(1)	Revised for clarity		X			Clarification
SR-7849							
SR-7853	300.3(B)(3)	Revised for clarity		X			Clarification
FR-8651	300.3(C)(1)	Revised for clarity		X			Clarification
FR-8667	300.4(G)	Revised for clarity		X			Clarification
SR-7865							
FR-8684	300.7(A)	Revised for clarity		X			Clarification
FR-8727	300.11(B)(1)	Revised for clarity		X			Clarification
SR-7882							
FR-8696	300.15(F)	Revised for clarity		X			Clarification
SR-7886							
FR-8726	300.19(C)	Revised for clarity		X			Clarification
FR-8730	300.22(C)	Revised for clarity		X			Clarification
FR-8729	300.22(D)	Revised for clarity		X			Clarification
FR-8742	300.25	New Section: Restrict wiring in exit enclosures to comply with NFPA 101		X			Safety
SR-7888	300.25	Revised for clarity		X			Clarification
FR-8736	300.40	Revised for clarity		X			Clarification
FR-8738	300.45	The signal word "Danger" is required in the sign. This prompts specific requirements to comply with ANSI Z535.4.		X			Safety
	Article 310	Conductors for General Wiring					
SCR-52	310, 311	Update references to articles 310 & 311 throughout code		X			Editorial

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7730	310.4	The mm equivalent of 55 mils for SIS cable was corrected from 2.41 to 1.40.		X			Clarification
SR-7612	310.6(C)	Equipment grounding conductors have specific color requirements in the NEC. Other grounding and bonding conductors may not have specific color requirements.		X			
SR-7633	310.8(B)(1)	Rubber was changed to thermoset to harmonize with changes made elsewhere in the NEC.		X			Clarification
SR-7636	310.8(B)(2)	Revised for clarity		X			Clarification
SR-7638	310.12	Revised for clarity		X			Clarification
SR-7650	310.15	Revised for clarity		X			Clarification
SCR-45	310.15	Revised for clarity		X			Clarification
FR-8918	310.15(B)(3)(C)	Relocate text from 310.15(B)(3)(c) to this section relating to temperature correction.		X			Clarification
SCR-46	310.16, 310.17, 310.18	Revised for Clarity		X			Clarification
SR-7651	310.16, 310.17, 310.18, 310.19, 310.20, 310.21	Added PFA, XHHN and Z to 90C copper. Revised for clarity.		X			Revision
	Article 311	Medium Voltage Conductors and Cables					
FR-8030	311	New Article: In order to consolidate the medium voltage requirements found in Articles 310 and 328, and to improve the usability of the code, the requirements are being combined into a new article 311.		X			
SR-7577	311.1	Editorial		X			Editorial
SR-7574	311.10	Editorial		X			Editorial
SR-7576	311.16(C)	Editorial		X			Editorial
SR-7578	311.32	Editorial		X			Editorial
SR-7579	311.36	Editorial		X			Editorial
	Article 312	Cabinets, Cutout Boxes, and Meter Socket Enclosures					
FR-7511	312.5(C)	Revised for Clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8157							
FR-7536	312.6	Revised for clarity		X			Clarification
SR-8158	312.6(A)	Revised for clarity		X			Clarification
FR-7538	312.6(B)(2)	Revised for clarity		X			Clarification
SR-8160							
FR-7539	312.8(B)	Adds term "Energy managing" to "power monitoring". Add provision for use of small conductors for sensors.		X			Clarification
SR-8161							
	Article 314	Outlet, Device, Pull, and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures					
FR-7543	314.16	Revised for clarity		X			Clarification
FR-7540	314.16(A)	Revised for clarity		X			Clarification
FR-7531	314.16(B)(5)	The requirement for the volume allowance for equipment grounding conductors and equipment bonding jumpers is revised to add an additional ¼ volume allowance to the existing volume allowance.		X			Clarification
FR-7546	314.17	cable designs with nonmetallic sheaths or coverings need to be addressed in these requirements.		X			Clarification
FR-7557	314.17(A)	Revised for clarity		X			Clarification
FR-7554	314.19	recognizes there is equipment other than “devices” that may be flush mounted in boxes.		X			Clarification
FR-7555	314.23(B)(1)	Revised for clarity		X			Clarification
FR-7706	314.23(D)(2)	Revised for clarity		X			Clarification
FR-7559	314.23(H)(2)	Revised for clarity		X			Clarification
FR-7560	314.25	Revised for clarity		X			Clarification
FR-7563	314.27(C)	recognizes that paddle fans can now be installed on outlet boxes with two current carrying conductors with the advent of the remote-controlled paddle fans.		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8163	314.27(C)	The first revision was further refined to ensure the longstanding and safe practice of supporting a ceiling-suspended (paddle) fan by the structural framing, and independent of the outlet box, remains a viable option.		X			Clarification
FR-7570	314.28(E)(1)	Revised for clarity		X			Clarification
SR-8236	314.29	Revised for clarity		X			Clarification
FR-7745	314.29	Revised for clarity		X			Clarification
FR-7578	314.30	Revised for clarity		X			Clarification
FR-7579	314.40(D)	Revised for clarity		X			Clarification
	Article 320	Armored Cable: Type AC					
FR-7873	320.2	Revised for clarity		X			Clarification
FR-7874	320.15	Revised for clarity		X			Clarification
FR-7876	320.23(A)	Revised for clarity		X			Clarification
FR-7877	320.30(C)	Revised for clarity		X			Clarification
FR-7959	320.80(A)	multiple cables in contact with thermal insulation create the potential for heating beyond the capabilities of the cables. This language will require spacing between the cables or derating of the conductor ampacity.		X			Safety
	Article 322	Flat Cable Assemblies: Type FC					
FR-7866	322.2	Revised for clarity		X			Clarification
	Article 324	Flat Conductor Cable: Type FCC					
FR-7871	324.2	Revised for clarity		X			Clarification
FR-7872	324.42(A)	Revised for clarity		X			Clarification
SR-7598	324.60	Revised for clarity		X			Clarification
	Article 326	Integrated Gas Spacer Cable: Type IGS					
FR-7868	326.2	Revised for clarity		X			Clarification
	Article 330	Metal-Clad Cable: Type MC					
FR-7879	330.2	Revised for clarity		X			Clarification
FR-7885	330.15	Revised for clarity		X			Clarification
FR-7961	330.80	multiple cables in contact with thermal insulation create the potential for heating beyond the capabilities of the cables. This language will require		X			Safety

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		spacing between the cables or derating of the conductor ampacity.					
SR-7742	330.80(B)	Revised for clarity		X			Clarification
SR-7736	330.104	The minimum size copper-clad aluminum conductor size was reduced to 14 AWG for control and signal conductors based on data submitted to the panel.		X			Clarification
FR-7883 SR-7590 SCR-47	330.130	New Section: Clarifies requirements for using MC cable in hazardous environments		X			Clarification
	Article 332	Mineral-Insulated, Metal-Sheathed Cable: Type MI					
FR-7870	332.2	Revised for clarity		X			Clarification
	Article 334	Nonmetallic-Sheathed Cable: Types NM, NMC, and NMS					
SR-7745	334	Revised title to remove type NMS, which is no longer manufactured		X			Clarification
FR-8002	334.2	Revised for clarity		X			Clarification
FR-8005	334.6	Revised for clarity		X			Clarification
FR-8020	334.10	Revised for clarity		X			Clarification
FR-8045	334.12	Revised title to remove type NMS, which is no longer manufactured		X			Clarification
SR-7727	334.12(A)	Revised for clarity		X			Clarification
SCR-48	334.12(A)	Revised for clarity		X			Clarification
FR-8046	334.15	Revised for clarity		X			Clarification
FR-8047	334.17	Revised title to remove type NMS, which is no longer manufactured		X			Clarification
FR-8048	334.24	Revised for clarity		X			Clarification
FR-8049 SR-7728	334.30	The cable length between the cable entry and the closest cable support shall not exceed 450 mm (18 in.).		X			Safety
FR-8050	334.80	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8051	334.104	Control and signaling conductors shall be no smaller than 18 AWG copper.		X			Clarification
FR-8053	334.116(C)	Revised title to remove type NMS, which is no longer manufactured		X			Clarification
	Article 336	Power and Control Tray Cable: Type TC					
FR-7635	336.2	Revised for clarity		X			Clarification
FR-8032	336.10	Revised for clarity		X			Clarification
SR-7689	336.10	The designation "TC-ER-JP" was added to the mandatory language and the informational note was deleted.		X			Clarification
FR-7676	336.80	Revised for clarity		X			Clarification
SR-7739	336.104	Revised for clarity		X			Clarification
FR-7647	336.130	New Section: This language addresses construction requirements for tray cables installed in hazardous locations, including suitability for the environment and compatibility with connectors.		X			Clarification
SR-7674							
	Article 337	Type P Cable					
FR-8036	337	New Article: Type P (IEEE-1580/UL-1309) Marine Shipboard Cable is flexible and rugged and is highly suitable for petrochemical applications and oil and gas well drilling land based rigs because of its ability to resist various chemicals, abrasives, and petroleum based additives as well as its ability to resist damage from vibration, shaking, and movement that occurs in many processes have a long successful history of more than 4 decades in installations in the most adverse conditions.		X			Revision
SR-7729							
	Article 338	Service-Entrance Cable: Types SE and USE					
FR-7953	338.2	The language recommended by the CC Task Group on definitions was added and a new definition was added to		X			Clarification

DRAFT

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CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
		clarify the difference between an assembly and a cable.				
FR-7955	338.10(B)(4)	This language will require spacing between the cables or ampacity adjustment.		X		Safety
SR-7678						
FR-7950	338.100	Due to concerns for corrosion the allowance for use of a bare conductor was removed.		X		Safety
SR-7680						
	Article 340	Underground Feeder and Branch-Circuit Cable: Type UF				
FR-7765	340.2	Revised for clarity		X		Clarification
FR-7777	340.10	Revised for clarity		X		Clarification
FR-7776	340.12	Revised for clarity		X		Clarification
	Article 342	Intermediate Metal Conduit: Type IMC		X		
FR-7983	342.2	Revised for clarity		X		Clarification
FR-8023	342.10(E)	New Section: Clarifies that IMC can be installed where subject to severe physical damage		X		Clarification
FR-7986	342.14	Stainless steel fittings are permitted to be used with galvanized steel IMC.		X		Clarification
FR-7987	342.22	Revised for clarity		X		Clarification
SR-7503	342.22	Revised for clarity		X		Clarification
FR-7988	342.28	Revised for clarity		X		Clarification
FR-8021	342.100	Revised for clarity		X		Clarification
FR-7991	342.130	Information not necessary and deleted		X		Revision
	Article 344	Rigid Metal Conduit: Type RMC				
FR-7992	344.2	Revised for clarity		X		Clarification
FR-7993	344.10(A)	Revised for clarity		X		Clarification
FR-7994	344.10(D)	New Section: RMC can be installed where subject to severe damage		X		Clarification
FR-8025	344.14	Stainless steel fittings are permitted to be used with galvanized steel RMC.		X		Clarification
FR-8026	344.22	Revised for clarity		X		Clarification
SR-7504	344.22	Revised for clarity		X		Clarification
FR-7995	344.28	Revised for clarity		X		Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7996	344.130	Information not necessary and deleted		X			Clarification
	Article 348	Flexible Metal Conduit: Type FMC					
FR-7921	348.2	Revised for clarity		X			Clarification
FR-8003	348.22	Revised for clarity		X			Clarification
SR-7505	348.22	Revised for clarity		X			Clarification
	Article 350	Liquidtight Flexible Metal Conduit: Type LFMC					
FR-7922	350.2	Revised for clarity		X			Clarification
FR-7923	350.10	Conductors or cables with higher temperature ratings are permitted to be used in LFMC as long as the conductors or cables are not operated at a higher temperature than the conduit temperature rating.		X			Clarification
SR-7610							
FR-7926	350.12	Revised for clarity		X			Clarification
FR-7928	350.22(A)	Revised for clarity		X			Clarification
FR-8006	350.30(A)	Revised for clarity		X			Clarification
SR-7506	350.22(A)	Revised for clarity		X			Clarification
	Article 352	Rigid Polyvinyl Chloride Conduit: Type PVC					
FR-7934	352.2	Revised for clarity		X			Clarification
FR-8008	352.22	Revised for clarity		X			Clarification
SR-7507	352.22	Revised for clarity		X			Clarification
	Article 353	High Density Polyethylene Conduit: Type HDPE					
FR-7904	353.2	Revised for clarity		X			Clarification
FR-7905	353.22	Revised for clarity		X			Clarification
SR-7508	353.22	Revised for clarity		X			Clarification
	Article 354	Nonmetallic Underground Conduit with Conductors: Type NUCC					
FR-7906	354.2	Revised for clarity		X			Clarification
	Article 355	Reinforced Thermosetting Resin Conduit: Type RTRC					
FR-7908	355.2	Revised for clarity		X			Clarification
FR-7951	355.22	Revised for clarity		X			Clarification
SR-7510	355.22	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
	Article 356	Liquidtight Flexible Nonmetallic Conduit: Type LFNC					
FR-7952	356.2	Revised for clarity		X			Clarification
FR-7893	356.2	Revised for clarity		X			Clarification
FR-7894	356.10	Conductors or cables rated at a temperature rating of LFNC conduit shall be permitted to be installed in LFNC, provided the conductors or cables are not operated at a temperature higher than the listed temperature rating of the LFNC		X			Clarification
SR-7613							
FR-8004	356.10(1)	Revised for clarity		X			Clarification
FR-7998	356.10(2)	Revised for clarity		X			Clarification
FR-7895	356.22	Revised for clarity		X			Clarification
SR-7511	356.22	Revised for clarity		X			Clarification
SR-7615	356.30	Revised for clarity		X			Clarification
	Article 358	Electrical Metallic Tubing: Type EMT					
FR-7997	358.2	Revised for clarity		X			Clarification
FR-8084	358.10(D)	New Section: Clarifies that EMT can be used where subject to physical damage		X			Clarification
FR-8085	358.14	Stainless steel fittings are permitted to be used with galvanized steel EMT.		X			Clarification
FR-8086	358.22	Revised for clarity		X			Clarification
SR-7512	358.22	Revised for clarity		X			Clarification
	Article 360	Flexible Metallic Tubing: Type FMT					
FR-7910	360.2	Revised for clarity		X			Clarification
FR-7912	360.22(A)	Revised for clarity		X			Clarification
SR-7513	360.22(A)	Revised for clarity		X			Clarification
	Article 362	Electrical Nonmetallic Tubing: Type ENT					
FR-7914	362.2	Revised for clarity		X			Clarification
FR-8001	362.10	Revised for clarity		X			Clarification
FR-7915	362.22	Revised for clarity		X			Clarification
SR-7514	362.22	Revised for clarity		X			Clarification
SR-7618	362.30(A)	Revised for clarity		X			Clarification
	Article 366	Auxiliary Gutters					
FR-8087	366.2	Revised for clarity		X			Clarification

DRAFT

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CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8088	366.22	Revised for clarity		X			Clarification
FR-8090	366.23	This revision also clarifies that the adjustment factor requirement in 366.23(A) shall only be applied where the number of current carrying conductors exceeds 30 at any cross section of the sheet metal auxiliary gutter.		X			Clarification
SR-7593	366.23	Revised for clarity		X			Clarification
	Article 368	Busways					
FR-8044	368.2	Revised for clarity		X			Clarification
FR-8055	368.17(A)	Revised for clarity		X			Clarification
FR-8052	368.56	Revised for clarity		X			Clarification
FR-8054	368.258	Revised for clarity		X			Clarification
FR-8058	368.320	Revised for clarity		X			Clarification
	Article 370	Cablebus					
FR-8056	370.2	Revised for clarity		X			Clarification
SR-7604	370.20(B)	Revised for clarity		X			Clarification
FR-8064	370.23	Revised for clarity		X			Clarification
FR-8063	370.80	Revised for clarity		X			Clarification
SR-7602	370.80	Revised for clarity		X			Clarification
	Article 372	Cellular Concrete Floor Raceways					
FR-8072	372.2	Revised for clarity		X			Clarification
FR-8073	372.18(D)	Revised for clarity		X			Clarification
	Article 374	Cellular Metal Floor Raceways					
FR-8074	374.2	Revised for clarity		X			Clarification
FR-8092	374.6	New Section: Cellular metal floor raceways shall be listed.		X			Clarification
	Article 376	Metal Wireways					
FR-8078	376.2	Revised for clarity		X			Clarification
FR-8082	376.20	Revised for clarity		X			Clarification
SR-7620	376.20	Revised for clarity		X			Clarification
FR-8083	376.22(B)	Revised for clarity		X			Clarification
SR-7624	376.22(B)	Revised for clarity		X			Clarification
	Article 378	Nonmetallic Wireways					
FR-7897	378.2	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7625	378.22	Revised for clarity		X			Clarification
	Article 380	Multioutlet Assembly					
FR-7903	380.12	Revised for clarity		X			Clarification
	Article 382	Nonmetallic Extensions					
FR-7696	382.2	Revised for clarity		X			Clarification
FR-7697	382.100	Revised for clarity		X			Clarification
FR-7699	382.104	Revised for clarity		X			Clarification
FR-7700	382.112	Revised for clarity		X			Clarification
	Article 384	Strut-Type Channel Raceway					
FR-8065	384.2	Revised for clarity		X			Clarification
SR-7626	384.22	Revised for clarity		X			Clarification
	Article 386	Surface Metal Raceways					
FR-8067	386.2	Revised for clarity		X			Clarification
SR-7627	386.22	Revised for clarity		X			Clarification
	Article 388	Surface Nonmetallic Raceways					
FR-8068	388.2	Revised for clarity		X			Clarification
	Article 390	Underfloor Raceways					
FR-8094	390	Revised for clarity		X			Clarification
SR-7630	390.23	Revised for clarity		X			Clarification
	Article 392	Cable Trays					
FR-7936	392.1	Revised for clarity		X			Clarification
SR-7535	392.1	Revised for clarity		X			Clarification
FR-7937	392.2	Revised for clarity		X			Clarification
FR-8011	392.3(4)	Revised for clarity		X			Clarification
FR-7940	392.10	clarifies the use of single conductors in cable trays.		X			Clarification
FR-7941	392.10(B)	Revised for clarity		X			Clarification
FR-8009	392.10(B)(1)(b)	Revised for clarity		X			Clarification
FR-7945	392.18(H)	Revised for clarity		X			Clarification
FR-8010	392.30(B)	Multiconductor cables were added to 392.30(B) where transitioning from cable tray to another cable tray or raceway		X			Clarification
SR-7540							
FR-7964	392.44	New Section: Expansion Splice Plates.		X			
SR-7543							

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8013	392.46	revised to clarify a compliant application for conductors and cables to transition from the cable tray to raceways or to enter into enclosures		X			Clarification
SR-7544	392.46(A), 392.46(B)	Revised for clarity		X			Clarification
FR-7966	392.60(A)	Revised for clarity		X			Clarification
SR-7546	392.60(A), 392.60(B)	Revised for clarity		X			Clarification
FR-8015	392.80(A)	Revised for clarity		X			Clarification
FR-8017	392.80(A)(1)	Revised for clarity		X			Clarification
SR-7552	392.80(A)(1)	Revised for clarity		X			Clarification
SR-7554	392.80(A)(2)	Revised for clarity		X			Clarification
FR-8018	392.80(B)	Revised for clarity		X			Clarification
FR-8019	392.80(B)(1)	Revised for clarity		X			Clarification
SR-7558	392.80(B)(1)	Revised for clarity		X			Clarification
SR-7556	392.80(B)(2)	Revised for clarity		X			Clarification
	Article 393	Low-Voltage Suspended Ceiling Power Distribution Systems					
FR-8133	393.2	Revised for clarity		X			Clarification
FR-8134	393.10	Revised for clarity		X			Clarification
FR-8135	393.14(A)	Revised for clarity		X			Clarification
FR-8136	393.40(A)	Revised for clarity		X			Clarification
	Article 394	Concealed Knob-and-Tube Wiring					
FR-7701	394.2	Revised for clarity		X			Clarification
	Article 396	Messenger-Supported Wiring					
FR-7702	396.2	Revised for clarity		X			Clarification
	Article 398	Open Wiring on Insulators					
FR-7704	398.2	Revised for clarity		X			Clarification
	Article 399	Outdoor Overhead Conductors over 1000 Volts					
FR-7711	399.10	Revised for clarity		X			Clarification
FR-7710	399.2	Revised for clarity		X			Clarification
FR-7712	399.30(B)	Revised for clarity		X			Clarification
	CHAPTER 4	EQUIPMENT FOR GENERAL USE					
	Article 400	Flexible Cords and Flexible Cables					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7911	400.1	The Informational note is appropriately located under 400.12 and was revised for clarity.		X			Clarification
FR-7917	400.4	Table updated to include new outdoor heater cable type		X			Revision
FR-7901	400.5(A)	Revised for clarity		X			Clarification
SR-7732	400.12	Revised for clarity		X			Clarification
FR-7907	400.12	Revised for clarity		X			Clarification
FR-7931	400.17	Revised for clarity		X			Clarification
FR-7932	400.23	Revised for clarity		X			Clarification
	Article 402	Fixture Wires					
FR-7982	402.3	Revision		X			Clarification
FR-7978	402.5	Revision		X			Clarification
	Article 404	Switches					
FR-7607	404.1	Revised for clarity		X			Clarification
FR-7611	404.2(C)	Revised for clarity		X			Clarification
SR-8166	404.2(C)	Revised for clarity		X			Clarification
FR-7613	404.4(C)	Revised for clarity		X			Clarification
FR-7621	404.7	Switches and circuit breakers must clearly indicate whether they are in the open or closed position. this indication must be visible without opening the enclosure to see the open/closed indication		X			Safety
FR-7671	404.9	Topics covered need to apply equally to dimmer switches and other switches with comparable control functions such as occupancy sensors that are located in similar environments.		X			Clarification
SR-8168	404.9(B)	Revised for clarity		X			Clarification
FR-7634	404.10	Topics covered need to apply equally to dimmer switches and other switches with comparable control functions such as occupancy sensors that are located in similar environments.		X			Clarification
FR-7642	404.12	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7674	404.14	Requires switches to be listed, and modernizes the rules for ac or dc general-use snap switches by adding coverage of electronic ballasts, self-ballasted lamps, compact fluorescent lamps, and LED lamps with their associated drivers.		X			Safety
SR-8170							
SCR-32							
FR-7646	404.22	Revised for clarity		X			Clarification
	Article 406	Receptacles, Cord Connectors, and Attachment Plugs (Caps)					
FR-8241	406	Revised for clarity		X			Clarification
FR-8250	406.1	Revised for clarity		X			Clarification
FR-8254	406.2	Revised for clarity		X			Clarification
SR-8187	406.3(A)	Receptacles shall not be permitted to be reconditioned		X			Safety
FR-8257	406.3(D)	Revised for clarity		X			Clarification
FR-8386	406.4(A)	Revised for clarity		X			Clarification
FR-8297	406.4(C)	Revised for clarity		X			Clarification
FR-8314	406.4(D)(3)	Revised for clarity		X			Clarification
SR-8204	406.4(D)(3)	Revised for clarity		X			Clarification
FR-8302	406.4(D)(4)	Revised for clarity		X			Clarification
FR-8319	406.4(D)(7)	New Section: The new text addresses the replacement of controlled receptacles. It addresses safety concerns related to the removal of the control feature.		X			Safety
SR-8211	406.4(D)(7)	Revised for clarity		X			Clarification
FR-8336	406.5(G)	A receptacle outlet installed in the area beneath a sink should not be installed in a face-up position, which could allow water or other objects to enter the receptacle.		X			Safety
SR-8189	406.7	wiring devices are not recommended for reconditioning.		X			Safety
FR-8345	406.9(A), 406.9(B)	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8350	406.9(C)	Defines the a zone measured 900 mm (3 ft) horizontally and 2.5 m (8 ft) vertically from the top of the bathtub rim where a receptable cannot be installed.		X			Safety
SR-8214	406.9(C)	Revised for clarity		X			Clarification
FR-8357	406.10	Revised for clarity		X			Clarification
FR-8368	406.12	Clarifies areas that require tamper proof receptacles		X			Clarification
FR-8378	406.13	New Section: Single pole seperable connectors		X			Safety
	Article 408	Switchboards, Switchgear, and Panelboards					
FR-7655	408.3(A)	Barrier requirements relocated to article 230		X			Clarification
FR-7764	408.3(D)	Barrier requirements relocated to article 230		X			Clarification
FR-7661	408.4(A)	Revised for clarity		X			Clarification
FR-7663	408.6	New Section: The available short-circuit current and the date the calculation was performed shall be documented and made available to those authorized to inspect the installation. Exception for 1 and 2 family dwellings			X	\$40/ panel	Safety
SR-8171							
SR-8172	408.8	New Section: Panelboards cannot be reconditioned. Switchboards can be reconditioned. Lable must be replaced to indicate the equipment is reconditioned.		X			Safety
FR-7675	408.18(C)	New Section: Special instructions for gear requiring the installed to reach across bus bars to make connections.		X			Safety
SR-8180							
FR-7659	408.23	New Section: rules to allow power monitoring equipment in a switchboard		X			Clarification
SR-8185	408.36	Revised for clarity		X			Clarification
SR-8186	408.40	Revised for clarity		X			Clarification
SR-8240	408.43	New Section: Panelboards shall not be installed in the face-up position.		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7693	408.56	Revised for clarity		X			Clarification
SR-8188	408.56	Revised for clarity		X			Clarification
SCR-11	408.56	Revised for clarity		X			Clarification
	Article 409	Industrial Control Panels					
FR-7900	409.22(A), 409.22(B)	Revised for clarity		X			Clarification
	Article 410	Luminaires, Lampholders, and Lamps					
FR-8388	410.2	Revised for clarity		X			Clarification
SR-8162	410.6	Luminaires, lampholders, and retrofit kits shall not be permitted to be reconditioned		X			Safety
FR-8394	410.10(D)	Revised for clarity		X			Clarification
FR-8400	410.16	Revised for clarity		X			Clarification
FR-8406	410.22	Revised for clarity		X			Clarification
FR-8418	410.36(A)	Revised for clarity		X			Clarification
SR-8169	410.36(A)	Revised for clarity		X			Clarification
SR-8173	410.40	Revised for clarity		X			Clarification
FR-8426	410.42	Revised for clarity		X			Clarification
SR-8225	410.42	Revised for clarity		X			Clarification
FR-8430	410.44	Revised for clarity		X			Clarification
FR-8433	410.46	Section deleted in first draft		X			Editorial
SR-8174	410.46	Section returned in second draft		X			Editorial
FR-8479	410.52	Section deleted in first draft		X			Editorial
SR-8175	410.52	Section returned in second draft		X			Editorial
FR-8480	410.54	Section deleted in first draft		X			Editorial
SR-8183	410.54	Section returned in second draft		X			Editorial
FR-8482	410.62(C)(1)	Revised for clarity		X			Clarification
FR-8512	410.69	New Section: Require a different color for lighting control wires		X			Safety
SR-8179							
FR-8390	410.70	Section deleted in first draft		X			Editorial
SR-8177	410.70	Section returned in second draft		X			Editorial
FR-8505	410.82	Section deleted in first draft		X			Editorial
SR-8181	410.82	Section returned in second draft		X			Editorial

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8515	410.115(B)	Added listing requirement for luminaires installed in fire rated installations.		X			Safety
FR-8412	410.118	Luminaires cannot be used to access a junction box not related to the luminaire		X			Safety
FR-8529	410.136(B)	Revision		X			Clarification
SR-8182	410.136(B)	Revised for clarity		X			Clarification
FR-8542	410.137(C)	Updated to include provisions for LEDs		X			Clarification
FR-8530	410.141(B)	Revision		X			Clarification
FR-8537	Part XVI	New Part XVI. Special Provisions for Horticultural Lighting Equipment		X			Safety
SR-8167	410.184	Revised for clarity		X			Clarification
	Article 411	Low-Voltage Lighting					
SR-8164	411.4	Listed low-voltage lighting cannot be reconditioned		X			Safety
SR-8242	411.4(B)	Revised for clarity		X			Clarification
FR-8138	411.6(D)	Delete redundant material		X			Clarification
	Article 422	Appliances					
SR-8124	422.5(A)	Revised for clarity		X			Clarification
FR-8164	422.5(B)	Revised for clarity		X			Clarification
FR-8143	422.5(A)	Added sump pumps and bottle fill stations to GFCI requirements			X	\$50/ device	Safety
FR-8176	422.6	Revised for clarity		X			Clarification
SR-7868	422.6	Revised for clarity		X			Clarification
FR-8287	422.10	Revised for clarity		X			Clarification
FR-8188	422.11(F)(1)	Revised for clarity		X			Clarification
SR-7869	422.13	Revised for clarity		X			Clarification
FR-8282	422.16(A)	Revised for clarity		X			Clarification
SR-7872	422.16(A)	Revised for clarity		X			Clarification
FR-8283	422.16(B)(1)	Revised for clarity		X			Clarification
FR-8284	422.16(B)(2)	Revised for clarity		X			Clarification
FR-8285	422.16(B)(3)	Revised for clarity		X			Clarification
FR-8286	422.16(B)(4)	Revised for clarity		X			Clarification
SR-7875	422.16(B)	Revised for clarity		X			Clarification
SR-7880	422.17	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SCR-49	422.17	Revised for clarity		X			Clarification
FR-8235	422.19	Revised for clarity		X			Clarification
FR-8237	422.21	New Section		X			Clarification
FR-8243	422.31(A)	Revised for clarity		X			Clarification
FR-8245	422.31(B)	Revised for clarity		X			Clarification
FR-8224	422 Parts IV & V	Sections deleted in first draft		X			Editorial
SR-7900	422 Parts IV & V	Sections returned in second draft		X			Editroial
	Article 424	Fixed Electric Space-Heating Equipment					
FR-8300	424.1	Revised for clarity		X			Clarification
SR-7970	424.1	Revised for clarity		X			Clarification
FR-8303	424.2	Revised for clarity		X			Clarification
SR-7976	424.2	Revised for clarity		X			Clarification
FR-8318	424.3	Revised for clarity		X			Clarification
FR-8308	424.3(B)	Revised for clarity		X			Clarification
SR-7977	424.4(A)	Revised for clarity		X			Clarification
SR-7985	424.4(B)	Revised for clarity		X			Clarification
FR-8312	424.9	Revised for clarity		X			Clarification
FR-8301	424.10	Revised for clarity		X			Clarification
SR-7986	424.10	Revised for clarity		X			Clarification
FR-8320	424.11	Revised for clarity		X			Clarification
FR-8324	424.19	Revised for clarity		X			Clarification
FR-8329	424.19(A)(1)	Revised for clarity		X			Clarification
FR-8343	424.19(A)(2)	Revised for clarity		X			Clarification
FR-8346	424.19(B)(1)	Revised for clarity		X			Clarification
FR-8353	424.19(C)(1)	Revised for clarity		X			Clarification
FR-8354	424.19(C)(2)	Revised for clarity		X			Clarification
FR-8372	424.20(A)	Thermostats acting also as a disconnect must be installed in an accessible location		X			Clarification
SR-7988	424.20(A)	Revised for clarity		X			Clarification
FR-8379	424.22(A)	Revised for clarity		X			Clarification
SR-7997	424.22(A)	Revised for clarity		X			Clarification
SR-8006	424.22(C)	Revised for clarity		X			Clarification
FR-8387	424.28(B)	Revised for clarity		X			Clarification
FR-8405	424.36	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8010	424.36	Revised for clarity		X			Clarification
SCR-51	424.36	Revised for clarity		X			Clarification
FR-8409	424.38(A)	Revised for clarity		X			Clarification
FR-8416	424.38(C)	Revised for clarity		X			Clarification
FR-8421	424.39	Revised for clarity		X			Clarification
FR-8428	424.41(J)	Revised for clarity		X			Clarification
FR-8431	424.43(A)	Revised for clarity		X			Clarification
SR-8012	424.44(E)	Revised for clarity		X			Clarification
SCR-54	424.44(E)	Revised for clarity		X			Clarification
FR-8432	424.45(C)	Revised for clarity		X			Clarification
FR-8436	424.45(D)	Revised for clarity		X			Clarification
SR-8013	424.45(D)	Revised for clarity		X			Clarification
SR-8014	424.45(E)	Revised for clarity		X			Clarification
FR-8443	424.46	Revised for clarity		X			Clarification
FR-8446	424.65	Revised for clarity		X			Clarification
FR-8447	424.66	Controls also now specified to be accessible.		X			Clarification
FR-8488	424.72(D)	Revised for clarity		X			Clarification
FR-8494	424.85	Revised for clarity		X			Clarification
FR-8495	424.86	Revised for clarity		X			Clarification
FR-8497	424.91	Revised for clarity		X			Clarification
FR-8499	424.93(A)(3)	Revised for clarity		X			Clarification
SR-8016	424.94	Revised for clarity		X			Clarification
SCR-55	424.94	Revised for clarity		X			Clarification
FR-8500	424.94	Revised for clarity		X			Clarification
SR-7854	424.95	Revised for clarity		X			Clarification
SCR-56	424.95	Revised for clarity		X			Clarification
FR-8502	424.97	Revised for clarity		X			Clarification
FR-8507	424.99(B)	Revised for clarity		X			Clarification
FR-8508	424.99(B)(4)	Revised for clarity		X			Clarification
SR-8017	424.99(B)(5)	Revised for clarity		X			Clarification
	Article 425	Fixed Resistance and Electrode Industrial Process Heating Equipment					
FR-8533	425.1	Revised for clarity		X			Clarification
SR-7942	425.1	Revised for clarity		X			Clarification
SCR-57	425.1	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8538	425.2	Revised for clarity		X			Clarification
FR-8540	425.3	Revised for clarity		X			Clarification
SR-8018	425.4(A)	Revised for clarity		X			Clarification
FR-8539	425.9	Revised for clarity		X			Clarification
FR-8541	425.19	Revised for clarity		X			Clarification
FR-8543	425.19(A)(1)	Revised for clarity		X			Clarification
FR-8594	425.19(A)(2)	Revised for clarity		X			Clarification
FR-8544	425.19(B)(1)	Revised for clarity		X			Clarification
FR-8545	425.19(B)(2)	Revised for clarity		X			Clarification
FR-8547	425.22(B)	Revised for clarity		X			Clarification
FR-8571	425.22(D)	Revised for clarity		X			Clarification
FR-8558	425.28(A)	Revised for clarity		X			Clarification
FR-8560	425.28(B)	Nameplate must be permanently installed		X			Safety
SR-7945	425.28(B)	Revised for clarity		X			Clarification
FR-8562	425.29	Revised for clarity		X			Clarification
FR-8564	425.45	Revised for clarity		X			Clarification
FR-8567	425.64	Revised for clarity		X			Clarification
SR-7946	425.64	Revised for clarity		X			Clarification
FR-8535	425.8(A)	Revised for clarity		X			Clarification
FR-8570	425.82	Revised for clarity		X			Clarification
SR-7948	425.82	Revised for clarity		X			Clarification
FR-8572	425.85	Revised for clarity		X			Clarification
FR-8574	425.86	Revised for clarity		X			Clarification
	Article 426	Fixed Outdoor Electric Deicing and Snow-Melting Equipment					
FR-8578	426.1	Revised for clarity		X			Clarification
SR-7911	426.2	Revised for clarity		X			Clarification
FR-8583	426.10	Revised for clarity		X			Clarification
SR-7926	426.20	Replace all instances of " masonry or asphalt" with "concrete, masonry or asphalt" in the following sections.		X			Clarification
FR-8618	426.20(C)	Revised for clarity		X			Clarification
FR-8587	426.21(A)	Revised for clarity		X			Clarification

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8606	426.22	To improve the overall safety of the system, the nonheating leads are now required to have a continuous grounding sheath or braid. The revisions ensure a complete ground path.		X			Safety
SR-7915	426.22	Revised for clarity		X			Clarification
SR-7939	426.34	Revised for clarity		X			Clarification
SR-7855	426.40	Revised for clarity		X			Clarification
FR-8614	426.44	Revised for clarity		X			Clarification
SR-7934	426.44	Revised for clarity		X			Clarification
FR-8615	426.51(A)	Revised for clarity		X			Clarification
FR-8616	426.51(D)	Revised for clarity		X			Clarification
	Article 427	Fixed Electric Heating Equipment for Pipelines and Vessels					
FR-8252	427.1	Revised for clarity		X			Clarification
FR-8258	427.2	Revised for clarity		X			Clarification
FR-8265	427.15	Revised for clarity		X			Clarification
FR-8259	427.20	Revised for clarity		X			Clarification
FR-8268	427.23	The revision clarifies the ground-fault protection requirements. The ground conductor is not required to carry the full fault current.		X			Clarification
SR-7857	427.45	Revised for clarity		X			Clarification
FR-8296	427.57	Revised for clarity		X			Clarification
	Article 430	Motors, Motor Circuits, and Controllers					
FR-7942	430 & 440	Editorial					
SR-7597	430.122(A)						
FR-8000	430.122(A)	New Section					
SR-7641	430.122(B)						
FR-7989	430.122(B)	New Section					
SR-7688	430.122(D)						
SR-7677	430.130(A)						
FR-7999	430.130(A)	Revision					
FR-7960	430.2	Revision					
SCR-76	430.246	Delete Section					
SR-7658	430.246, Table 430.252						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7565	430.26						
FR-7970	430.26	Revision					
FR-8027	430.32(A)(2)	Revision					
FR-8028	430.32(B)(2)	Revision					
FR-7972	430.52(C)(3)	Revision					
FR-7967	430.6	Revision					
FR-8024	430.7(A)	Revision					
SR-7609	430.96						
SCR-35	430.96						
SR-7603	430.98(A)						
FR-7975	430.99	Revision					
	Article 440	Air-Conditioning and Refrigerating Equipment					
FR-7927	440.10(A)	Revision					
FR-7939	440.10(B)	Revision					
FR-7918	440.2	Revision					
SR-7691	440.32						
FR-7925	440.9	Revision					
	Article 445	Generators					
SR-7640	445.11						
FR-7720	445.11	Revision					
FR-8874	445.18	Revision					
SR-7645	445.18						
FR-7770	445.18(A)	Revision					
FR-7846	445.18(C)	New Section					
SR-7639	445.6	New Section					
	Article 450	Transformers and Transformer Vaults (Including Secondary Ties)					
FR-7767	450.10(B)	Revision					
FR-7768	450.14	Revision					
SR-8191	450.2						
SR-8201	450.21(B)						
FR-7782	450.21(B)	Revision					
FR-7788	450.23(A)	Revision					
SR-8203	450.23(A), 450.23(B)						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SCR-12	450.23(A), 450.23(B)						
FR-7783	450.27	Revision					
SR-8205	450.42						
FR-7784	450.42	Revision					
FR-7785	450.43(C)	Revision					
FR-7787	450.45(E)	Revision					
FR-7772	450.6(A)(1)	Revision					
FR-7773	450.6(A)(2)	Revision					
SR-8197	450.9						
FR-7774	450.9	Revision					
FR-7775	455.2	Revision					
	Article 460	Capacitors					
FR-7909	460.1	New Section					
FR-7913	460.25(D)	Revision					
FR-8582	462.2	Revision					
	Article 480	Storage Batteries					
FR-8979	480	Revision					
SR-7708	480.1						
SR-7735	480.10						
SR-7719	480.10(C)						
SR-7714	480.10(E)						
FR-8875	480.2	Revision					
SR-7721	480.7						
FR-8089	480.7	Revision					
	Article 490	Equipment Over 1000 Volts, Nominal					
FR-7795	490.1	Revision					
SR-8207	490.2						
FR-7827	490.21(A)	Revision					
SR-8212	490.21(A)(4)						
SR-8215	490.21(B)(2)						
SR-8216	490.21(C)(3)						
SR-8217	490.21(D)(2)						
FR-7805	490.21(E)	Revision					
SR-8219	490.21(E)						
SR-8220	490.25						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7811	490.35(B)	Revision					
FR-7823	490.44(C)	Revision					
FR-7824	490.46	Revision					
FR-7836	490.48(B)	Revision					
SR-8222	490.49	New Section					
	CHAPTER 5	SPECIAL OCCUPANCIES					
	Article 500	Hazardous (Classified) Locations, Classes I, II, and III, Divisions 1 and 2					
FR-7778	500	Revision					
SR-7852	500.4						
FR-7851	500.4(B)	Revision					
SR-7895	500.5(A)						
FR-7506	500.5(A)	Revision					
FR-7522	500.5(C)(1)	Revision					
FR-7510	500.6	Revision					
FR-7865	500.7	Revision					
SR-7917	500.7						
SR-8082	500.7(K)						
FR-7867	500.7(K)	New Section					
FR-7723	500.7(K)	Revision					
SR-8086	500.7(O)	New Section					
FR-7514	500.8(E)(1), 500.8(E)(2)	Revision					
FR-7869	500.8(F)	New Section					
SR-7918	500.8(G)						
	Article 501	Class I Locations					
FR-7605	501(A)(2)(4)	Revision					
FR-7572	501.(B)(1)(6)	Revision					
FR-7565	501.10(A)(1)	Revision					
FR-7596	501.10(A)(1)	Revision					
SR-7962	501.10(A)(1)						
FR-7609	501.10(A)(1)	Revision					
SR-7979	501.10(A)(1)(3)						
SR-7963	501.10(A)(2)						
FR-7594	501.10(A)(2)	Revision					
FR-7532	501.10(A)(3)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
SR-8007	501.10(B)(1)					
FR-7620	501.10(B)(1)	Revision				
FR-7577	501.10(B)(1)(1)	Revision				
FR-7616	501.10(B)(1)(9)	Revision				
FR-7533	501.10(B)(4)	Revision				
FR-7569	501.10.(A)(1)(3)	Revision				
FR-7632	501.105(B)(6)	Revision				
FR-7636	501.130(B)(5)	Revision				
FR-7638	501.135(B)(1)	Revision				
FR-7623	501.15(A)(1)	Revision				
FR-7652	501.15(D)(1)	Revision				
FR-7630	501.17	Revision				
	Article 502	Class II Locations				
SR-7932	502.10(A)(1)					
SCR-37	502.10(A)(1)					
FR-7645	502.10(A)(1)	Revision				
FR-7725	502.10(A)(1)(6)	Revision				
FR-7726	502.10(A)(1)(7)	Revision				
SR-7937	502.10(A)(2)					
FR-7727	502.10(A)(2)	Revision				
FR-7728	502.10(A)(2)(8)	Revision				
FR-7660	502.10(A)(3)	Revision				
SR-7943	502.10(B)(1)					
FR-7668	502.10(B)(1)	Revision				
FR-7673	502.10(B)(1)(10)	Revision				
FR-7724	502.10(B)(7)	Revision				
FR-7858	502.150(B)(4)	New Section				
	Article 503	Class III Locations				
SR-8021	503.10(A)(1)					
FR-7681	503.10(A)(1)	Revision				
SR-8024	503.10(A)(3)					
FR-7678	503.5	Revision				
	Article 505	Zone 0, 1, and 2 Locations				
FR-7789	505	Revision				
SR-8026	505.15(B)(1)					
FR-7837	505.15(B)(1)	Revision				

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
FR-7835	505.15(B)(1)(10)	Revision				
FR-7834	505.15(B)(1)(9)	Revision				
SR-8028	505.15(B)(2)					
FR-7840	505.15(B)(2)	Revision				
SR-8031	505.15(C)(1)					
FR-7842	505.15(C)(1)	Revision				
FR-7843	505.15(C)(2)	Revision				
FR-7845	505.16(B)(1)	Revision				
FR-7653	505.16(B)(2)	Revision				
FR-7780	505.16(C)(2)	Revision				
FR-7848	505.19	Revision				
FR-7847	505.26	Revision				
SR-8123	505.3					
SR-8035	505.4					
FR-7792	505.4(A)	Revision				
FR-7794	505.4(B)	Revision				
SR-8040	505.5(A)					
FR-7796	505.5(A)	Revision				
SR-8041	505.5(B)(1)					
FR-7797	505.6	Revision				
FR-7806	505.7(B)	Revision				
FR-7798	505.7(F)	Revision				
FR-7799	505.8	Revision				
SR-8043	505.8					
FR-7801	505.8(A), 505.8(B)	Revision				
FR-7804	505.8(C)	Revision				
FR-7809	505.8(E)	Revision				
FR-7884	505.8(F), 505.8(G), 505.8(H)	Revision				
FR-7812	505.8(I)	New Section				
FR-7875	505.8(I)	New Section				
FR-7821	505.8(I)	Revision				
FR-7831	505.9	Revision				
SR-8054	505.9(C)(2)					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7878	505.9(G)	Revision					
SR-8051	505.9(G)						
	Article 506	Zone 20, 21, and 22 Locations for Combustible Dusts or Ignitable Fibers/Fillings					
FR-7733	506	Revision					
SR-8058	506.1						
SR-8064	506.15						
FR-7735	506.15(A)	Revision					
FR-7736	506.15(B)	Revision					
FR-7707	506.15(C)	Revision					
FR-7737	506.17	Revision					
FR-8102	506.2	Relocate definition of Protection to Article 100		X			
SR-8075	506.4						
FR-7690	506.4(B)	Revision					
FR-7734	506.5(B)(1), 506.5(B)(2), 506.5(B)(3)	Revision					
SR-8076	506.8						
FR-7692	506.8(H)	Revision					
FR-7695	506.8(I)	New Section					
FR-7880	506.8(I)	New Section					
FR-7694	506.8(I)	Revision					
SR-8077	506.9(C)(2)						
FR-7703	506.9(C)(2)	Revision					
FR-7882	506.9(F)	New Section					
SR-8081	506.9(G)						
	Article 511	Commercial Garages, Repair and Storage					
FR-7739	511.12	Revision					
FR-7738	511.8	Revision					
	Article 513	Aircraft Hangars					
FR-7742	513.12	Revision					
SR-8094	513.16(A)						
SR-8096	513.16(B)						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8093	513.3(C)(2)						
FR-7740	513.3(D)	Revision					
	Article 514	Motor Fuel Dispensing Facilities					
FR-7743	514.11(A)	Revision					
	Article 515	Bulk Storage Plants					
SR-8100	515.16						
FR-7744	515.3	Revision					
	Article 517	Health Care Facilities					
FR-8788	517	Revision					
FR-8795	517	Revision					
FR-8699	517.1	Revision					
FR-8662	517.10(B)	Revision					
FR-8700	517.12	Revision					
FR-8666	517.13	Revision					
FR-8670	517.16	Revision					
SR-7879	517.17						
FR-8681	517.17(A)	Revision					
FR-8701	517.17(B)	Revision					
FR-8685	517.17(D)	Revision					
FR-8688	517.18(A)	Revision					
FR-8690	517.18(B)	Revision					
FR-8697	517.19(G)	Revision					
FR-8698	517.19(H)	Revision					
FR-8655	517.2	Revision					
SR-7859	517.21						
FR-8796	517.21	Revision					
SR-7908	517.24	New Section					
SCR-39	517.24	Detete new section					
SR-7909	517.25						
FR-8712	517.25	Revision					
SR-7916	517.26						
FR-8713	517.26	Revision					
SR-7922	517.29						
FR-8714	517.29	Revision					
FR-8719	517.30(A), 517.30(B)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8723	517.30(C)	Revision					
FR-8732	517.31(A)	Revision					
FR-8740	517.31(B)	Revision					
SR-7931	517.31(B)						
SR-7941	517.31(C)(1)						
FR-8772	517.31(C)(1)	Revision					
SR-7957	517.31(C)(3)						
FR-8748	517.31(C)(3)	Revision					
SR-7964	517.31(D)						
FR-8773	517.31(D)	Revision					
SR-7968	517.31(G)						
SR-7969	517.32						
SR-7971	517.34(A)						
FR-8774	517.34(A)	Revision					
FR-8777	517.35(C)	Revision					
SR-7972	517.40						
FR-8710	517.40	Revision					
FR-8811	517.42	Revision					
SR-7940	517.42(B)						
FR-8810	517.42(C)	Revision					
FR-8780	517.44(B)	Revision					
FR-8782	517.45(D)	Revision					
SR-7851	517.5	New Section					
SCR-38	517.5	Delete new section					
FR-8785	517.61(A)(5), 517.61(A)(6)	Revision					
FR-8783	517.61(B)(5)	Revision					
FR-8705	517.61(C)(1)	Revision					
FR-8787	517.61(C)(2)	Revision					
FR-8708	517.72(A)	Revision					
FR-8702	517.81	Revision					
	Article 518	Assembly Occupancies					
FR-8813	518.2	Revision					
FR-8820	518.4(A)	Revision					
FR-8821	518.4(B)	Revision					
FR-8823	518.5	New Section					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8822	518.5	Revision					
	Article 520	Theaters, Audience Areas of Motion Picture and Television Studios, Performance Areas, and Similar Locations					
FR-8826	520.2	Revision					
FR-8827	520.25(B)	Revision					
FR-8828	520.27(B)	Revision					
FR-8830	520.44	Revision					
SR-7983	520.44(C)(3)						
FR-8831	520.46	Revision					
FR-8832	520.49	Revision					
FR-8817	520.53(B)	Revision					
FR-8815	520.54	Revision					
FR-8856	520.62(E)	Revision					
FR-8833	520.68	Revision					
FR-8837	520.81	Revision					
SR-7982	520.9						
	Article 522	Control Systems for Permanent Amusement Attractions					
FR-8838	522.2	Revision					
SR-8002	522.22						
SCR-53	522.22						
FR-8840	522.22	Revision					
FR-8842	522.24(B)(3)	Revision					
	Article 525	Carnivals, Circuses, Fairs, and Similar Events					
FR-8843	525.2	Revision					
SR-7987	525.20(G)						
FR-8844	525.20(G)	Revision					
FR-8845	525.21(B)	Revision					
SR-7993	525.23						
FR-8846	525.30	Revision					
	Article 530	Motion Picture and Television Studios and Similar Locations					
FR-8847	530.1	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8849	530.16	Revision					
FR-8850	530.17(A)	Revision					
FR-8852	530.18(E)	Revision					
FR-8861	530.19(B)	Revision					
FR-8848	530.2	Revision					
FR-8851	530.20	Revision					
FR-8853	530.21(B)	Revision					
FR-8855	530.22(B)	Revision					
SR-7996	530.23						
	Article 540	Motion Picture Projection Rooms					
FR-8816	540.1	Revision					
FR-8858	540.10	Revision					
FR-8860	540.11(A)(4)	Revision					
FR-8857	540.2	Revision					
	Article 545	Manufactured Buildings and Relocatable Structures					
FR-8993	545	Revision					
SR-7518	545.1						
FR-8137	545.2	Revision					
SR-7519	545.20						
SR-7529	545.22(A)						
SR-7541	545.22(B)						
SR-7548	545.22(C)						
SR-7550	545.22(D)						
SR-7559	545.22(E)						
SR-7561	545.24(A)						
SR-7570	545.24(B)						
SR-7533	545.27	New Section					
SR-7524	545.28						
SR-7521	545.6						
	Article 547	Agricultural Buildings					
FR-8146	547.1	Revision					
FR-8181	547.10(B)	Revision					
FR-8145	547.2	Revision					
FR-8149	547.4	Revision					
FR-8155	547.5(F)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7654	547.5(G)						
SCR-28	547.5(G)						
FR-8169	547.5(G)	Revision					
FR-8175	547.9	Revision					
	Article 520	Theaters, Audience Areas of Motion Picture and Television Studios, Performance Areas, and Similar Locations					
FR-8236	550.1	Revision					
FR-8466	550.10(B)	Revision					
FR-8256	550.10(C)	Revision					
SR-7634	550.13(B)						
SCR-29	550.13(B)						
FR-8293	550.13(B)	Revision					
FR-8299	550.15	Revision					
FR-8467	550.15(D)	Revision					
FR-8469	550.15(G)	Revision					
FR-8465	550.2	Revision					
SR-7628	550.30						
FR-8468	550.32(B)	Revision					
FR-8306	550.32(C)	Revision					
SR-7656	550.32(E)						
SCR-31	550.32(E)						
FR-8310	550.33(A)	Revision					
FR-8315	550.33(B)	Revision					
FR-8291	550.4(C)	Revision					
	Article 551	Recreational Vehicles and Recreational Vehicle Parks					
FR-8325	551.1	Revision					
FR-8471	551.2	Revision					
FR-8377	551.4(A)	Revision					
FR-8404	551.40(C)	New Section					
FR-8328	551.41(A)	Revision					
FR-8333	551.41(B)	Revision					
SR-7673	551.41(C)						
FR-8341	551.41(C)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
SR-7675	551.41(C)(5)					
FR-8356	551.44	Revision				
SR-7668	551.44					
SR-7681	551.46(C)					
FR-8472	551.46(C)	Revision				
FR-8359	551.46(D)	Revision				
FR-8473	551.47(M)	Revision				
FR-8374	551.47(P)	Revision				
FR-8411	551.47(R)	Revision				
FR-8376	551.51(A)(2)	Revision				
FR-8474	551.54	Revision				
FR-8382	551.55(E)	Revision				
FR-8384	551.56(B)	Revision				
FR-8475	551.71	Revision				
SR-7659	551.71(F)					
SCR-30	551.71(F)					
FR-8414	551.72(D)	New Section				
SR-7670	551.72(F)	New Section				
FR-8424	551.75	Revision				
FR-9006	551.76(A)	Revision				
FR-8427	551.81	Revision				
	Article 552	Park Trailers				
FR-8434	552.10(B)(2)	Revision				
FR-8437	552.10(D)	Revision				
FR-8476	552.2	Revision				
FR-8438	552.20(C)	Revision				
FR-8439	552.43(B)	Revision				
FR-8441	552.44(C)(1)	Revision				
FR-8442	552.44(C)(2)	Revision				
FR-8477	552.44(D)	Revision				
FR-8445	552.48(O)(1)	Revision				
FR-8478	552.55	Revision				
FR-8448	552.57(B)	Revision				
	Article 555	Marinas, Boatyards, and Commercial and Noncommercial Docking Facilities				
FR-8978	555	Revision				

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7694	555.1						
FR-8951	555.1	Revision					
FR-8965	555.13(B)(2)	Revision					
FR-8966	555.13(B)(3)	Revision					
FR-8967	555.13(B)(4)	Revision					
FR-8968	555.15	Revision					
FR-8969	555.17(B)	Revision					
FR-8973	555.19	New Section					
FR-8970	555.19(A)	Revision					
FR-8974	555.19(B)	New Section					
FR-8975	555.19(B)	Revision					
FR-8952	555.2	Revision					
FR-8976	555.24	New Section					
FR-8977	555.24	Revision					
FR-8954	555.3	Revision					
SR-8248	555.33(A)(1)						
SR-7712	555.35						
SR-7711	555.38						
SR-7715	555.4						
FR-8955	555.4	Revision					
SR-7695	555.5						
FR-8809	555.5	New Section					
FR-8957	555.5	Revision					
SR-7713	555.57						
FR-8959	555.9	Revision					
	Article 590	Temporary Installations					
FR-8769	590.4(F)	Revision					
SR-7894	590.4(G)						
FR-8770	590.4(G)	Revision					
FR-8771	590.6(B)	Revision					
SR-7904	590.6(B)(2)						
SR-7919	590.8	New Section					
	CHAPTER 6	SPECIAL EQUIPMENT					
	Article 600	Electric Signs and Outline Lighting					
SR-8239	600.10(C)(2)						
FR-8141	600.2	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8153	600.3	New Definition: Host Sign					
FR-8148	600.3	New Definition: Retrofit Kit, General Use					
FR-8156	600.3	New Definition: Retrofit Kit, Sign Specific					
FR-8154	600.3	New Definition: Subassembly					
FR-8157	600.3	Revision					
FR-8216	600.30	Revision					
SR-8241	600.33						
FR-8217	600.33(A)	Revision					
FR-8223	600.33(C)	Revision					
FR-8227	600.34	New Section					
SR-8230	600.4						
FR-8159	600.4	Revision					
SR-8232	600.5(A)						
FR-8174	600.5(A)	New Section					
FR-8171	600.5(A)	Revision					
SR-8234	600.5(B)						
FR-8180	600.5(C)(1)	Revision					
FR-8186	600.5(C)(2)	Revision					
FR-8200	600.6	Revision					
SR-8237	600.6(A)(1)						
FR-8289	600.6(A)(3)	New Section					
SR-8238	600.7(A)(2)						
	Article 604	Manufactured Wiring Systems					
FR-8204	604.1	Revision					
FR-8449	604.100(A)(1)	Revision					
FR-8450	604.100(A)(2)	Revision					
SR-7606	604.2						
	Article 605	Office Furnishings					
FR-8139	605.1	Revision					
FR-8140	605.2	Revision					
	Article 610	Cranes and Hoists					
SR-7766	610 Part VII						
FR-8142	610.11	Revision					
SR-7763	610.14(A)						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SCR-20	610.14(A)						
SR-7765	610.2						
FR-8147	610.61	Revision					
	Article 620	Elevators, Dumbwaiters, Escalators, Moving Walks, Platform Lifts, and Stairway Chairlifts					
FR-8205	620	Revision					
FR-8207	620 Part IX	Revision					
FR-8238	620.16(B)	Revision					
SR-7767	620.2						
FR-8240	620.21	Revision					
SR-7770	620.21						
FR-8248	620.21(A)(1)	Revision					
SR-7771	620.22(A)						
FR-8255	620.22(A)	Revision					
FR-8260	620.25(B)	Revision					
FR-8244	620.41	Revision					
FR-8261	620.51	Revision					
FR-8262	620.51(A)	Revision					
FR-8263	620.51(D)(2)	Revision					
FR-8267	620.51(E)	Revision					
FR-8292	620.53	Revision					
FR-8294	620.54	Revision					
SR-7769	620.6						
FR-8317	620.62	New Section					
FR-8309	620.62	Revision					
FR-8322	620.85	Revision					
FR-8619	620.91	Revision					
	Article 625	Electric Vehicle Charging System					
FR-8383	625	Revision					
FR-8391	625	Revision					
FR-8410	625	Revision					
SR-7776	625.1						
FR-8385	625.1	Revision					
FR-8589	625.102	Revision					
FR-8496	625.17(A)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8487	625.17(B)	Revision					
FR-8509	625.17(C)	New Section					
FR-8506	625.17(C)	Revision					
FR-8597	625.2	New Definition: Electric Vehicle Power Export Equipment (EVPE)					
SR-7779	625.2						
FR-8516	625.22	Revision					
FR-8554	625.41	Revision					
SR-7802	625.42						
SCR-21	625.42						
FR-8556	625.42	Revision					
SR-7803	625.43						
FR-8569	625.43	Revision					
FR-8573	625.44	Revision					
SR-7806	625.48						
FR-8576	625.48	Revision					
SR-7792	625.5						
FR-8399	625.5	Revision					
FR-8577	625.50	Revision					
FR-8586	625.52(A)	Revision					
FR-8588	625.52(B)	Revision					
FR-8591	625.52(B)(4)	Revision					
SR-7809	625.54						
FR-8581	625.54	Revision					
FR-8534	625.56	New Section					
FR-8584	625.56	Revision					
SR-7796	625.60(A)						
SR-7798	625.60(C)						
SR-7799	625.60(D)						
SR-7800	625.60(E)						
SR-7801	625.60(F)						
	Article 626	Electrified Truck Parking Spaces					
FR-8601	626.1	Revision					
FR-8605	626.11(B)	Revision					
SR-7811	626.2						
FR-8607	626.24(B)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
SR-7812	626.24(D)					
SR-7814	626.25(B)(4)					
FR-8609	626.25(B)(4)	Revision				
FR-8610	626.30(A)	Revision				
FR-8611	626.31(C)	Revision				
FR-8612	626.32(A)	Revision				
FR-8613	626.32(C)	Revision				
FR-8604	626.4	Revision				
	Article 630	Electric Welders				
FR-8150	630.31(A)	Revision				
	Article 640	Audio Signal Processing, Amplification, and Reproduction Equipment				
SR-7821	640.10(A)					
SR-7819	640.2					
FR-8339	640.3(B)	Revision				
FR-8340	640.9(C)	Revision				
	Article 645	Information Technology Equipment				
FR-8352	645.10	Revision				
SR-7824	645.10(B)					
SR-7836	645.11					
FR-8351	645.11	Revision				
FR-8355	645.14	Revision				
FR-8358	645.18	Revision				
SR-7822	645.2					
FR-8371	645.27	Revision				
SR-7823	645.3					
FR-8347	645.5(E)	Revision				
FR-8348	645.5(E)(2), 645.5(E)(3)	Revision				
	Article 646	Modular Data Centers				
SR-7827	646.19					
SR-7837	646.2					
SR-7826	646.3					
FR-8373	646.4	Revision				
	Article 647	Sensitive Electronic Equipment				
FR-8375	647.6(B)	Revision				

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
	Article 650	Pipe Organs					
SR-7829	650						
SR-7828	650.2						
FR-8160	650.6(D)	Revision					
	Article 660	X-Ray Equipment					
SR-7830	660.2						
FR-8161	660.5	Revision					
FR-8162	660.6(B)	Revision					
	Article 665	No changes					
SR-7831	665.2						
FR-8163	665.23	Revision					
	Article 668	Electrolytic Cells					
FR-8166	668.11	Revision					
FR-8170	668.15	Revision					
SR-7832	668.2						
FR-8167	668.21(B)	Revision					
FR-8177	668.3(B)	Revision					
FR-8173	668.3(C)(1), 668.3(C)(2), 668.3(C)(3)	Revision					
FR-8182	668.3(C)(4)	Revision					
	Article 669	Electroplating					
FR-8178	669.1	Revision					
	Article 670	Industrial Machinery					
SR-7833	670.2						
FR-8184	670.3(A)	Revision					
FR-8185	670.5	Revision					
SR-7834	670.6						
FR-8189	670.6	Revision					
	Article 675	Electrically Driven or Controlled Irrigation Machines					
FR-8218	675.1	Revision					
FR-8230	675.13	Revision					
FR-8231	675.14	Revision					
FR-8222	675.2	Revision					
FR-8220	675.21	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8225	675.4(A)	Revision					
SR-7516	675.5						
FR-8219	675.7	Revision					
FR-8229	675.8(B)	Revision					
	Article 680	Swimming Pools, Fountains, and Similar Installations					
SR-8071	680.11						
FR-8801	680.11	Revision					
SR-8142	680.14						
SCR-61	680.14						
FR-8891	680.2	New Definition: Corrosive Environment					
FR-8733	680.2	New Definition: Immersion Pool					
FR-8735	680.2	New Definition: Splash Pad					
FR-8717	680.2	Revision					
SR-8090	680.21(A)						
FR-8784	680.21(A)	Revision					
FR-8781	680.21(B)	Revision					
SR-8095	680.21(C)						
FR-8775	680.21(C)	New Section					
FR-8778	680.21(C)	Revision					
SR-8128	680.22(A)						
SCR-62	680.22(A)						
FR-8789	680.22(A)(4)	Revision					
FR-8786	680.22(B)(7)	New Section					
SR-8106	680.22(C)						
FR-8791	680.22(D)	New Section					
FR-8792	680.23(B)(2)	Revision					
FR-8794	680.23(B)(3)	Revision					
FR-8797	680.23(B)(4)	Revision					
SR-8108	680.23(B)(6)						
FR-8798	680.23(B)(6)	Revision					
SR-8088	680.23(F)(1)						
SCR-63	680.23(F)(1)						
FR-8803	680.23(F)(1)	Revision					
SR-8113	680.23(F)(2)						
FR-8834	680.23(F)(2)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8836	680.24(F)	Revision					
SR-8084	680.25(A)						
SCR-64	680.25(A)						
FR-8824	680.25(A)	Revision					
FR-8825	680.26(B)(1)	Revision					
SR-8126	680.26(B)(2)						
FR-8839	680.26(B)(5)	Revision					
FR-8841	680.26(B)(6)	Revision					
FR-8892	680.26(C)	Revision					
FR-8893	680.27(A)	Revision					
FR-8894	680.27(B)(1)	Revision					
FR-8895	680.27(B)(2)	Revision					
FR-8904	680.3	Revision					
FR-8903	680.30	Revision					
FR-8896	680.31	Revision					
FR-8897	680.34	New Section					
SR-8131	680.35						
SR-8057	680.4						
FR-8737	680.4	New Section					
FR-8739	680.4	Revision					
FR-8905	680.43(D)	Revision					
SR-8134	680.43(F)						
FR-8906	680.43(F)	Revision					
FR-8907	680.44	New Section					
SR-8136	680.45						
SR-8135	680.45						
SR-8103	680.5						
SCR-59	680.5						
FR-8744	680.50	Revision					
SR-8137	680.52(B)						
FR-8908	680.52(B)(1)	Revision					
FR-8909	680.52(B)(2)	Revision					
FR-8910	680.53	Revision					
SR-8138	680.54						
FR-8911	680.58	New Section					
SR-8067	680.6						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SCR-60	680.6						
FR-8746	680.6	Revision					
FR-8749	680.7	Revision					
FR-8912	680.74(A)	Revision					
FR-8913	680.74(B)	Revision					
SR-8139	680.80						
FR-8751	680.80	Revision					
SR-8140	680.82, 680.83, 680.84						
FR-8752	680.9(A)	Revision					
FR-8753	680.9(B)	Revision					
	Article 682	Natural and Artificially Made Bodies of Water					
FR-8921	682.1	Revision					
SR-8023	682.15						
SCR-65	682.15						
FR-8917	682.15	Revision					
FR-8919	682.2	New Definition: Pier					
FR-8914	682.2	Revision					
SR-8029	682.33(B)						
FR-8920	682.33(C)	Revision					
SR-8143	682.4	New Section					
	Article 685	Integrated Electrical Systems					
FR-8201	685.1	Revision					
	Article 690	Solar Photovoltaic (PV) Systems					
FR-8703	690 Part IV	Revision					
SR-8243	690.1						
FR-8568	690.1	Revision					
SR-7989	690.11						
FR-8239	690.11	Revision					
SR-7994	690.12						
SR-7998	690.12(A)						
FR-8242	690.12(A)	Revision					
SR-8025	690.12(B)(2)						
FR-8253	690.12(B)(2)	Revision					
SR-8005	690.12(C)						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8249	690.12(C)	Revision					
FR-8251	690.12(D)	Revision					
FR-8264	690.13(A)	Revision					
FR-8266	690.13(C)	Revision					
SR-8033	690.13(E)						
FR-8290	690.13(E)	Revision					
FR-8295	690.13(F)	Revision					
FR-8305	690.15	Revision					
FR-8644	690.15	Revision					
SR-8037	690.15						
FR-8307	690.15(A)	Revision					
SR-8039	690.15(B)						
FR-8311	690.15(B)	Revision					
SR-8042	690.15(C)						
FR-8321	690.15(C)	New Section					
FR-8316	690.15(C)	Revision					
SR-8045	690.15(D)						
FR-8327	690.15(D)	Revision					
FR-8520	690.2	New Definition: AC Module System					
FR-8526	690.2	New Definition: Electronic Power Converter					
FR-8741	690.2	Revision					
FR-8704	690.31	Revision					
SR-8050	690.31(A)						
FR-8645	690.31(A)	Revision					
FR-8647	690.31(B)	Revision					
SR-8053	690.31(B)						
SR-8055	690.31(B)(1)						
FR-8648	690.31(B)(1), 690.31(B)(2)	Revision					
SR-8149	690.31(C)						
FR-8650	690.31(C)	Revision					
SR-8056	690.31(C)(1)						
SR-8060	690.31(C)(2)						
SR-8062	690.31(C)(3)						
FR-8940	690.31(D)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-8073	690.31(D)						
SR-8078	690.31(E)						
SR-8080	690.31(F)						
FR-8692	690.31(G)	Revision					
FR-8693	690.31(H)	Revision					
FR-8695	690.31(I)	New Section					
FR-8694	690.31(l)	Revision					
FR-8393	690.32	Revision					
SR-8085	690.33						
FR-8395	690.33(D), 690.33(E)	Revision					
SR-8144	690.4(B)						
FR-8144	690.4(B)	Revision					
FR-8754	690.4(E)	New Section					
SR-8087	690.41(A)						
FR-8481	690.41(A)	Revision					
FR-8398	690.41(B)	Revision					
SR-8092	690.41(B)						
FR-8401	690.41(B)(1)	Revision					
FR-8402	690.41(B)(2)	Revision					
SR-8099	690.41(B)(3)						
SR-8101	690.43						
FR-8408	690.43	Revision					
SR-8107	690.45						
FR-8413	690.45	Revision					
FR-8415	690.46	Revision					
FR-8417	690.47(A)	Revision					
FR-8419	690.47(B)	Revision					
FR-8422	690.50	Revision					
FR-8707	690.51	Revision					
FR-8709	690.52	Revision					
FR-8711	690.53	Revision					
FR-8423	690.56(A)	Revision					
FR-8425	690.56(B)	Revision					
SR-8102	690.56(C)						
FR-8715	690.56(C)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8429	690.59	Revision					
FR-8152	690.6	Revision					
SR-7930	690.6(A)						
SR-7921	690.6(C)						
FR-8158	690.7	Revision					
SR-8132	690.7						
SR-7944	690.7(A)						
FR-8165	690.7(A)	Revision					
FR-8179	690.7(B)(1)	Revision					
FR-8183	690.7(B)(2)	Revision					
FR-8168	690.7(C)	Revision					
FR-8172	690.8(A)	Revision					
SR-8133	690.8(A)						
FR-8194	690.8(A)(1)	New Section					
FR-8756	690.8(A)(1)	Revision					
FR-8202	690.8(A)(2)	Revision					
FR-8208	690.8(A)(4)	Revision					
FR-8210	690.8(A)(6)	Revision					
SR-7949	690.8(B)						
FR-8213	690.8(B)	Revision					
SR-7951	690.9(A)						
FR-8226	690.9(A)	Revision					
SR-7952	690.9(A)(1)						
SR-7959	690.9(A)(2)						
SR-7966	690.9(A)(3)						
SCR-01	690.9(A)(3)						
SR-7981	690.9(B)						
FR-8232	690.9(B)	Revision					
FR-8233	690.9(C)	Revision					
	Article 691	Large-Scale Photovoltaic (PV) Electric Supply Stations					
FR-8949	691	Revision					
FR-8585	691.1	Revision					
SR-8115	691.11						
FR-8444	691.11	Revision					
FR-9002	691.2	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8948	691.4	Revision					
SR-8221	691.5						
FR-8435	691.5	Revision					
SR-8112	691.9						
FR-8440	691.9	Revision					
	Article 692	Fuel Cell Systems					
FR-8489	692.10	Revision					
FR-8992	692.2	Revision					
FR-8485	692.4(B)	Revision					
SR-8117	692.4(B)(2)						
SR-8224	692.6						
SR-8235	692.64						
	Article 694	Wind Electric Systems					
FR-8503	694.10(A)	Revision					
SR-8118	694.2						
FR-8493	694.22(C)(1)	Revision					
FR-8514	694.22(C)(2)	Revision					
FR-8513	694.54	Revision					
SR-8122	694.54(B)						
SR-8119	694.7(B)						
FR-8501	694.7(B)	Revision					
SR-8121	694.7(E)						
SR-8226	694.7(F)						
	Article 695	Fire Pumps					
FR-8980	695	Revision					
SR-7522	695.10						
SR-7523	695.14(F)						
FR-7732	695.14(F)	Revision					
FR-7721	695.2	Revision					
FR-7722	695.3(B)	Revision					
SR-7526	695.3(C)(3)						
FR-7729	695.3(C)(3)	Revision					
FR-7672	695.4(B)(2)	Revision					
FR-7730	695.6(A)	Revision					
FR-7677	695.6(I)	Revision					
SR-7534	695.6(J)						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7679	695.6(J)	Revision					
	CHAPTER 7	SPECIAL CONDITIONS					
	Article 700	Emergency Systems					
FR-8899	700.10(B)	Revision					
FR-7658	700.10(D)	Revision					
FR-8095	700.12	Revision					
SR-7605	700.12(I)(2)						
FR-7550	700.16	Revision					
SR-7607	700.16(B)						
SCR-23	700.16(B)						
FR-8093	700.2	Relocate definition to 100: Branch Circuit to Emergency Systems					
FR-7561	700.23	Revision					
SR-7608	700.24						
FR-7564	700.24	Revision					
FR-7503	700.3(B)	Revision					
FR-8898	700.3(F)	Revision					
SR-7616	700.32						
FR-7505	700.4	Revision					
SR-7665	700.4(B)						
FR-7507	700.5	Revision					
SR-7584	700.5(C)						
FR-7508	700.6(B)	Revision					
FR-7509	700.6(D)	Revision					
	Article 701	Legally Required Standby Systems					
FR-8900	701.1	Revision					
FR-8864	701.12	Revision					
FR-8865	701.12(I)	Revision					
FR-7575	701.2	Revision					
FR-7825	701.25, 701.26, 701.27	Revision					
FR-7826	701.3(B)	Revision					
SR-7619	701.32						
FR-7576	701.4	Revision					
SR-7629	701.4(A)						
SR-7669	701.4(B)						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7580	701.5	Revision					
SR-7586	701.5(C)						
	Article 702	Optional Standby Systems					
FR-8901	702.1	Revision					
FR-7600	702.2	Revision					
FR-7603	702.4(A)	Revision					
FR-7606	702.4(B)	Revision					
SR-7580	702.4(B)(2)						
SR-7588	702.5						
SR-7600	702.5						
FR-7830	702.5	Revision					
SR-7632	702.7						
	Article 705	Interconnected Electric Power Production Sources					
FR-8674	705	Revision					
SR-8198	705						
SR-8154	705.10						
FR-8608	705.10	New Section					
FR-8603	705.10	Revision					
SR-8155	705.11(B)						
SR-8156	705.11(C)						
SR-8159	705.11(D)						
SR-8176	705.11(E)						
SR-8178	705.11(F)						
SR-8184	705.12						
SCR-03	705.12						
FR-8745	705.12	New Section					
FR-8902	705.12	Revision					
SR-8148	705.12(B)						
SCR-02	705.12(B)						
SR-8150	705.12(D)						
SR-8151	705.13						
SR-8152	705.14						
SR-8199	705.150						
FR-8683	705.150	Revision					
SR-8200	705.160						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8687	705.160	Revision					
SR-8229	705.170						
FR-8596	705.2	New Definition: Power Source Output Circuit					
SR-8153	705.20						
FR-8747	705.20, 705.21, 705.22	Revision					
FR-8660	705.22	New Section					
FR-8663	705.23	New Section					
FR-8659	705.23	Revision					
SR-8190	705.28						
FR-8599	705.3	Revision					
SR-8193	705.30						
FR-8964	705.30	Revision					
FR-8664	705.31	Revision					
FR-8665	705.32	Revision					
SR-8195	705.40						
FR-8750	705.40, 705.42	Revision					
SR-8196	705.45	New Section					
FR-8668	705.50	Revision					
SR-8228	705.6						
FR-8602	705.6	Revision					
	Article 706	Energy Storage Systems					
FR-8956	706	Revision					
SR-7706	706 Part V						
SR-7707	706 Part VI						
SR-7683	706.1						
SCR-24	706.1						
FR-8103	706.1	Revision					
FR-8944	706.10	Revision					
FR-8953	706.11	Revision					
SR-7700	706.15(A)						
SR-7731	706.15(C)						
SR-7693	706.16						
FR-9008	706.2	Revision					
SR-7560	706.2	Energy Storate System (ESS)					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
SR-7698	706.20						
FR-8958	706.20(A)(1)	Revision					
FR-8960	706.20(A)(4)	Revision					
FR-8961	706.20(B)	Revision					
SR-7703	706.21						
FR-8963	706.21	Revision					
FR-7969	706.23(A)	Revision					
FR-8962	706.23(B)(3)	Revision					
FR-7857	706.3	Revision					
SR-7704	706.31(F)						
SR-7684	706.4						
FR-8922	706.4	Revision					
FR-7976	706.40	Revision					
SR-7686	706.5						
FR-8923	706.5	Revision					
FR-8924	706.6	New Section					
FR-8925	706.6	New Section					
FR-8942	706.7	Revision					
SCR-25	706.8	Editorial					
FR-8943	706.8	Revision					
SR-7687	706.9						
	Article 708	Critical Operations Power Systems (COPS)					
FR-9001	708.1	Revision					
FR-8870	708.1	Revision					
FR-7627	708.14	Revision					
FR-9000	708.2	Revision					
FR-7628	708.20(A), 708.20(B)	Revision					
FR-8871	708.20(G)	Revision					
SR-7517	708.24(A)						
FR-8872	708.24(C)	New Section					
SR-7622	708.54						
FR-7626	708.6(B)	Revision					
	Article 710	Stand-alone Systems					
SR-8202	710.1						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8720	710.1	New Section					
FR-8718	710.1	Revision					
SR-8210	710.10						
SR-8213	710.15						
FR-8722	710.15(A), 710.15(B)	Revision					
FR-8725	710.15(C), 710.15(D), 710.15(E), 710.15(F)	Revision					
SR-8206	710.2						
SCR-04	710.2						
SR-8209	710.6						
FR-8721	710.6	New Section					
FR-8724	710.6	New Section					
	Article 712	Direct Current Microgrids					
FR-7839	712.10	Revision					
SR-7660	712.10(B)						
FR-8868	712.2	Revision					
FR-8867	712.2	Revision					
FR-7802	712.25	Revision					
FR-7807	712.34	Revision					
SR-7662	712.37						
FR-7815	712.4	Revision					
SR-7663	712.52(B)						
SR-7664	712.55						
FR-8873	712.57	Revision					
FR-7817	712.65	Revision					
FR-8866	712.72	Revision					
SR-7923	720.2						
FR-8776	720.2	Revision					
	Article 725	Class 1, Class 2, and Class 3 Remote-Control, Signalling, and Power-Limited Circuits					
SR-7947	725(P)	New Section					
SR-7960	725.121(A)						

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8835	725.121(A)	Revision					
SR-7967	725.121(C)						
FR-8859	725.121(C)	Revision					
FR-8862	725.135(B)	Revision					
FR-8927	725.135(E)	Revision					
FR-8928	725.135(K)	Revision					
FR-8929	725.135(L)	Revision					
FR-8930	725.135(M)	Revision					
FR-8931	725.136(I)	Revision					
FR-8863	725.139(D)(1)	Revision					
FR-8941	725.144	Revision					
SR-7980	725.144						
SR-7973	725.144(A)						
FR-8932	725.144(A)	Revision					
SR-7975	725.144(B)						
FR-8934	725.144(B)	Revision					
FR-8945	725.154	Revision					
FR-8996	725.179(F)(2)	Revision					
FR-8935	725.179(G)	Revision					
FR-8936	725.179(I)	Revision					
FR-8937	725.179(J)	New Section					
FR-8876	725.179(J)	Revision					
SR-7990	725.179(K)						
FR-8779	725.2	New Definition: Cable Bundle					
FR-8790	725.2	New Definition: Nominal Current					
SR-7929	725.2						
FR-8819	725.24	Revision					
FR-8793	725.3	Revision					
SR-7936	725.3(C)						
SCR-75	725.3(C)						
SR-7938	725.3(D)						
FR-8879	725.3(D)	Revision					
FR-8800	725.3(E)	Revision					
FR-8799	725.3(G)	Revision					
SR-8032	725.3(M)						
FR-8812	725.3(M)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-8926	725.3(N)	New Section					
FR-8814	725.3(N)	Revision					
SR-7958	725.48(B)(1)						
FR-8994	725.48(B)(1)	Revision					
	Article 727	Instrumentation Tray Cable: Type ITC					
SR-7995	727.2						
FR-8881	727.8	Revision					
SR-8000	728.2						
FR-8997	728.4	Revision					
SR-8001	728.60						
	Article 750	Energy Management Systems					
FR-8743	750.2	Revision					
FR-8869	750.2	Revision					
	Article 760	Fire Alarm Systems					
SR-8004	760(O)	New Section					
FR-8885	760.121(B)	Revision					
FR-8886	760.135(B)	Revision					
FR-8950	760.154	Revision					
FR-8998	760.176(F)	Revision					
FR-8887	760.176(G)	Revision					
FR-8888	760.179(C)	Revision					
FR-8999	760.179(G)	Revision					
FR-8889	760.179(I)	Revision					
SR-8003	760.2						
FR-8883	760.24(A)	Revision					
SR-8008	760.24(A)						
FR-8882	760.24(A)	Revision					
SR-8034	760.3(L)						
SCR-73	760.3(L)						
FR-8995	760.3(M)	New Section					
SR-8009	760.36	New Section					
SCR-74	760.36	Delete new section					
	Article 770	Optical Fiber Cables					
FR-7530	770	Revision					
FR-7585	770.100(B)	Revision					
FR-7584	770.100(B)(1)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7597	770.110	Revision					
SR-7722	770.110						
FR-7601	770.110(A)	Revision					
FR-7586	770.110(C)	New Section					
FR-7558	770.113(A)	Revision					
FR-7608	770.113(B)	Revision					
SR-7747	770.113(C)						
FR-7610	770.113(C)	Revision					
SR-7723	770.114						
SR-7725	770.133						
FR-7615	770.133(A)	Revision					
FR-7633	770.179	Revision					
SR-7726	770.179(G)	New Section					
FR-7535	770.2	Revision					
FR-7581	770.24	Revision					
SCR-40	770.24						
FR-7567	770.24	Revision					
SR-7720	770.49						
FR-7582	770.49	Revision					
FR-7583	770.93	Revision					
	CHAPTER 8	COMMUNICATION SYSTEMS					
	Article 800	General Requirements for Communications Systems					
FR-7644	800	Delete informational note					
FR-8042	800	Editorial					
SCR-43	800, 805, 820, 830	Editorial					
SR-7539	800.1, 805,1, 820.1, 830.1, 840.1						
FR-7715	800.100(B)(1)	Revision					
FR-7717	800.100(B)(2)	Revision					
FR-7716	800.100(B)(2)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
SR-7690	800.100, 805.100, 820.100, 830.100, 840.100					
SR-7692	800.106, 805.106, 820.106, 830.106, 840.106					
FR-7741	800.110	Revision				
SR-7696	800.110, 805.110, 820.110, 830.110, 840.110					
FR-7748	800.113(B)	Revision				
FR-7752	800.113(C)	Revision				
FR-7757	800.113(J)	Revision				
FR-7760	800.113(K)	Revision				
FR-7762	800.113(L)	Revision				
SR-7709	800.113, 805.113, 820.113, 830.113, 840.113					
FR-7763	800.133(A)(1)	Revision				
SCR-66	800.154					
FR-7769	800.154	Revision				
SR-7717	800.154, 805.154, 820.154, 830.154, 840.154					
FR-7779	800.170	Revision				
FR-8012	800.179	Revision				

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7790	800.179	Revision					
FR-7786	800.179(G)	New Section					
SR-7741	800.179, 805.179, 820.179, 830.179						
FR-8014	800.182(A)	Revision					
FR-7793	800.182(C)	Revision					
FR-7656	800.2	Revision					
SR-7569	800.2						
SR-7595	800.2						
SR-7562	800.2, 805.2, 810.2, 830.2, 840.2						
SR-7637	800.24						
SCR-41	800.24						
FR-7683	800.24	Revision					
FR-7665	800.3	Revision					
SR-7509	800.3(G)	New Section					
FR-7669	800.3(H)	Revision					
SR-7611	800.3, 805.2, 820.3, 830.3, 840.3						
SR-7734	800.44, 805.44, 820.44, 830.44, 840.44, 840.45, 840.46						
FR-7691	800.47(B)	New Section					
SR-7661	800.48						
FR-7698	800.49	Revision					
SCR-42	800.53						
FR-7709	800.53	Revision					
SR-7679	800.80						
FR-7713	800.90(A)	Revision					
FR-7714	800.93	Revision					
	Article 805	Communications Circuits					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7512	800	Reorganize common elements of chapter 8 into new article 805		X			
SR-7744	805.180, 820.180, 830.180, 840.180						
SR-7746	805.182						
SR-7581	805.2, 800.2, 830.2						
SR-7599	805.2, 820.2						
SR-7592	805.2, 820.2, 830.2						
SR-7621	805.21, 820.21, 830.21, 840.21						
SR-7642	805.21, 820.24						
SR-7646	805.25, 520.25, 830.25						
SR-7647	805.26, 820.26, 830.26						
SR-7648	805.27, 820.27, 830.27, 840.27						
SR-7748	805.47						
SR-7667	805.49, 820.49, 830.49, 840.49						
SR-7672	805.53						
	Article 810	Radio and Television Equipment					
FR-7929	810	Delete informational note					
FR-7933	810.21(A)	Revision					
FR-7935	810.21(F)(2)	Revision					
	Article 820	Community Antenna Television and Radio Distribution Systems					
FR-7938	820	Delete informational note					
FR-7949	820.100(B)(2)	Revision					
FR-7954	820.110	Revision					
FR-7956	820.113(B), 820.113(C)	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY	IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
SCR-67	820.133(A)(1)					
FR-7829	820.154	Revision				
FR-8016	820.179(D)	Revision				
FR-7943	820.2	Revision				
FR-7947	820.24	Revision				
FR-7946	820.26	New Section				
FR-7944	820.3	Revision				
SCR-44	820.44(A)					
FR-7948	820.49	Revision				
	Article 830	Network-Powered Broadband Communications Systems				
FR-9005	830	Revision				
FR-7841	830.100(B)	Revision				
FR-7844	830.110	Revision				
FR-7850	830.113(B), 830.113(C)	Revision				
SCR-69	830.133					
FR-7853	830.179	Revision				
FR-7803	830.2	Revision				
SR-7653	830.24					
FR-7832	830.24	Revision				
FR-7816	830.26	New Section				
FR-7813	830.3	Revision				
SCR-68	830.3(B)					
FR-7833	830.47(C)	Revision				
FR-7838	830.49	Revision				
	Article 840	Premises-Powered Broadband Communications Systems				
FR-7891	840.101	New Section				
SR-7749	840.101(A)					
SR-7750	840.102					
SR-7751	840.160					
FR-7892	840.160	Revision				
FR-7919	840.170(C)	Revision				
SR-7753	840.170(C), 840.170(D)					

DRAFT

Table 8. 2020 NEC Changes Cost Impact

CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
FR-7856	840.2	New Definition: Broadband					
FR-7859	840.2	New Definition: Premises-Powered					
FR-7854	840.2	Revision					
FR-8117	840.2	Revision					
FR-7887	840.26	New Section					
FR-7881	840.3	Revision					
SCR-70	840.3(B)						
FR-7888	840.44	Revision					
FR-7889	840.93	New Section					
	CHAPTER 9	TABLES					
SR-7563	Table 1, Note 4	Table 1 Note 4 revised					
FR-8330	Table 1, Note 2	Revision					
FR-8331	Table 5A	Revision					
FR-8367	Table 10	Revision					
	Annex A	Product Safety Standards					
FR-8759	Annex A	Product Safety Standards					
SR-7906	Annex A	Annex A					
	Annex B	Application Information for Ampacity Calculation					
FR-7968	Annex B	Application Information for Ampacity Calculation					
SCR-50	Annex B	Update references					
SR-7743	Annex B						
	Annex C	Conduit, Tubing, and Cable Tray Fill Tables					
SR-7575	Annex C	Annex C					
FR-8100	Annex C	Revision					
FR-8326	Annex C	Revision					
	Annex F	Types of Construction					
FR-7640	Annex F	Revision Part I					
FR-7641	Annex F	Revision Part II					
	Annex H	Administration and Enforcement					
FR-8760	Annex H	Administration and Enforcement					
FR-8761	80.2	Revision					

DRAFT

Table 8. 2020 NEC Changes Cost Impact							
CODE CHANGE #	2020 NATIONAL ELECTRIC CODE CHANGE SUMMARY		IFGC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
	Annex I	Recommended Tightening Torque Tables					
FR-8762	Annex I	Recommended Tightening Torque Tables					

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APPENDIX I

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT						
CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Chapter 2: Definitions						
CCC IBC4-20, G1-18	Modified: The definition of a "Atrium" has changed.		X			Improves the definition of atrium.
FS62-18	Modified: The definition of "Ceiling Radiation Damper" has changed to show they can be utilized in static or dynamic systems.		X			Improves the definition of ceiling radiation damper.
ADM3-19 Part 1	Modified: The definition of "Change of Occupancy" has changed to narrow the scope where there is no occupancy change takes place.		X			Improves the definition of change of occupancy.
G5-18 PART 1	Modified: The definition of a "Emergency Escape and Rescue Opening" has changed to clarify that it is exterior.		X			Improves the definition of emergency escape and rescue opening.
FS53-18	Modified: The definition of "F Rating" has changed to accommodate new perimeter fire containment system requirements.		X			Improves the definition of F rating.
G34-18	New: A definition was added for "Fire Protective Curtain Assembly."		X			Necessary addition.
G10-19	New: A definition was added for "Fire-Retardant-Treated Wood."		X			Necessary addition.
G4-19 Part 1	New: A definition was added for "Glass Mat Gypsum Panel."		X			Necessary addition.
G4-18	Modified: The definition for "Grade Floor Emergency Escape and Rescue Opening" has been changed to coordinate with new measurement requirements.		X			Improves the definition of grade floor Emergency escape and rescue opening.
G5-19	Modified: The definition of "Gypsum Board" has changed to show its more generic usage.		X			Improves the definition of gypsum board.
G5-19	Modified: The definition of "Gypsum Panel Product" has changed and identified the appropriate code requirements.		X			Improves the definition of gypsum panel product.
G4-19 Part 1	New: A definition was added for "Gypsum Sheathing".		X			Necessary addition.
G4-19 Part 1	New: A definition was added for "Gypsum Wallboard".		X			Necessary addition.
S110-19	New: A definition was added for "Impact Protective System".		X			Necessary addition.
S168-19	New: A definition was added for "Individual Truss Member".		X			Necessary addition.
	New: A definition was added for "Life Safety Systems".		X			Necessary addition.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
G108-18	New: A definition was added for “Mass Timber”. Needed for mass timber construction.		X			Necessary addition.
G39-18	New: A definition was added for “Mechanical-Access Enclosed Parking Garage”.		X			Necessary addition.
FS2-19	New: A definition was added for “Nailable Substrate”.		X			Necessary addition.
G108-18	New: A definition was added for “Noncombustible Protection (For Mass Timber)”. Needed for mass timber construction.		X			Necessary addition.
G136-18	Modified: The definition of a “Penthouse” has changed to add stairs to it.		X			Improves the definition of penthouse.
FS53-18	New: A definition was added for “Perimeter Fire Containment System” to provide a simple phrase to use when describing the method of protecting the void at the intersection of an exterior curtain wall assembly and a fire-resistance-rated floor or floor/ceiling assembly.		X			Necessary addition.
N/A	Modified: The name for “Play Structure” has changed. Removed mention of children to allow for play structures serving all ages.		X			Improves the name of play structure.
G10-19	New: A definition was added for “Preservative-Treated Wood”. Clarification to remove word “conditioned” from definition.		X			Necessary addition.
G103-18	Modified: The definition of a “Primary Structural Frame” has changed and updated to note newer technologies.		X			Improves the definition of the primary structural frame.
G48-18	New: A definition was added for “Puzzle Room”.		X			Necessary addition.
G103-18	Modified: The definition of a “Secondary Structural Members” has changed and updated to note newer technologies.		X			Improves the definition of the secondary structural members.
FS38-18	Modified: The definition of a “Smoke Compartments” has changed and clarifies isolating interior areas.		X			Improves the definition of the smoke compartments members.
CCC IBC2-20	Modified: The definition of “Soft Contained Play Equipment Structure” has changed. Removed mention of children to allow for play structures serving all ages.		X			Improves the definition of soft contained play equipment structure.
FS60-18	New: A definition was added for “Terminated Stops”.		X			Necessary addition.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
G10-19	Modified: The definition of “Treated Wood” has changed. Clarification to remove word “conditioned” from definition.		X			Improves the definition of treated wood.
G12-18	Modified: The definition of “Vapor Permeable” has changed. Adding a test procedure that is more appropriate for some products		X			Improves the definition of vapor permeable.
G108-18	Modified: The definition of “Wall, Load-Bearing” has been changed. Added reference to Mass timber.		X			Improved the definition of load-bearing wall.
Chapter 3: Occupancy Classification and Use						
Section 306: Factory Group F						
G17-18, G18-18	306.2 Modified: Energy storage systems and water/sewer treatment facilities are considered a Group F-1 occupancy.		X			Clarifies and amends the list of moderate-hazard factory industrial occupancies.
Section 307: High-Hazard Group H						
F276-18, F293-18	307.1.1 Modified: Distilling or brewing of beverages or the storage of beer, distilled spirits, and wines and barrels and casks conforming to the IFC are not considered Group H.	X				These uses are not limited in quantity and will not be considered Group H. This is consistent with previous NFPA approaches
Section 311: Storage Group S						
F276-18	311.2 Modified: Storage of alcohol beverages over 16% are considered a Group S-1 occupancy		X			Clarifies and amends the list of moderate-hazard storage occupancies.
F276-18, G13-18	311.3 Modified: Storage of alcohol beverages up to and including 16% (regardless of container material) are considered a Group S-2 occupancy		X			Clarifies and amends the list of low-hazard storage occupancies.
Chapter 4: Special Detailed Requirements Based on Occupancy and Use						
Section 403: High-Rise Buildings						
G27-18, G13-19	403.2 Modified: Multiple section numbers are revised as a section was removed.		X			Clarification without code intent change.
G27-18, G13-19	403.2.2.1 Modified: Section title revised to clarify soft body impact wall assembly materials. Wall assembly nomenclature revised to “panels”.		X			Clarification of the application of C1629/ C1629M without code intent change.
G27-18, G13-19	403.2.2.2 Modified: Section title revised to clarify hard body impact wall assembly materials. Wall assembly and construction board nomenclature revised to “panels”.		X			Clarification of the application of C1629/ C1629M without code intent change.
F110-18	403.3 Modified: Open parking garages are removed from being exempt from sprinkler systems.			X		Open parking garages over 48,000 sqft. require a sprinkler system.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT						
CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
G28-18	403.3.2 Modified: Fire pumps are required at 120 feet in building height for Type IVA and IVAB mass timber construction.		X			Necessary revision based on mass timber changes.
F45-18	403.4.5 Modified: Section title and description nomenclature modified from “emergency responder radio coverage” to “two-way emergency communication coverage”.		X			Change allows correlation with the IFC.
F196-18	403.4.8.2 Modified: Additional protection methods are provided to protect fuel line piping.		X			Design flexibility change by providing additional option.
G29-18	403.5.6 Removed: Emergency escape and rescue exception is removed for consistency.		X			These openings were never required in high-rises, so it was an unnecessary code requirement.
Section 404: Atriums						
G30-18, G31-18	404.1 Modified: This section was rewritten to clarify general scope.		X			This is intended as a clarification.
G32-18	404.5 Modified: A new exception is provided for atriums with more than two stories, which may not require a smoke control system when separated from all upper floors by shaft construction.	X				Design flexibility change to utilize a natural smoke sink in lieu of an active smoke control system.
G33-18	404.6 Modified: Additional exceptions are provided to address escalators and exit access stairways/ramps that penetrate the required horizontal assembly.	X				Design flexibility change to avoid having to provide draft curtains and closely spaced sprinklers/ limiting opening if part of atrium.
G31-18	404.9 Modified: Exit access travel distances rules are relocated to 1017.3.2 for atriums.		X			Consolidates atrium and means of egress requirements in Chapters 4 and 10, respectively.
G35-18	404.10 New: New requirements are provided for interior exit stairways in an atrium.		X			Atrium interior exit stairways must meet multiple requirements to be considered exits. Added clarification for original code requirements.
G31-18, G35-18	404.11 Modified: Interior exit stairway discharge requirements are relocated to Section 1028 for atriums.		X			Consolidates atrium and means of egress requirements in Chapters 4 and 10, respectively.
Section 406: Motor-Vehicle-Related Occupancies						

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
G36-18	406.2.4 Modified: The exception for S-2 parking garages are not required to have sloped floor surfaces removed.			X		Sloping floors for the vehicle areas of parking garages has been reinstated for Group S-2 occupancies.
Section 407: Group I-2						
G42-18	407.3.1.1 New: Group I-2 corridor doors not requiring a fire protection rating have new requirements.		X			Expands the smoke-resistance criteria for Group I-2 corridor doors to match existing CMS criteria.
G43-18	407.4.4.1 Modified: Exit access through Group I-2 care suites has been revised.		X			Design flexibility change and has better consistency with CMS standards.
G48-18, G44-18	407.4.4.3 Modified: Group I-2 care suite access to corridors has been revised.		X			Design flexibility change and has better consistency with CMS standards.
G46-18	407.6.1 New: The activation of automatic-closing doors in defined in Group I-2 occupancies.			X		Activation must occur upon fire alarm or automatic sprinkler activation.
Section 411: Special Amusement Areas						
G48-18	411.5 New: New requirements are provided for puzzle rooms.			X		Necessary revision based on puzzle rooms becoming more popular.
Section 414: Hazardous Materials						
F288-18	414.2.3 Modified: Fire walls complying with Section 706 shall be considered separate buildings for purposes of number of control areas.	X				Design flexibility change.
Section 420: Groups I-1, R-1, R-2, R-3, and R-4						
G55-18, G56-18	Modified: Multiple section numbers are revised as a section was added.		X			Clarification without code intent change.
Section 422: Ambulatory Care Facilities						
G58-18	422.7 New: New requirements are provided for domestic cooking appliances in ambulatory care facilities.			X		Fire concerns for domestic cooking appliances are addressed.
Section 424: Play Structures						
G66-18	Modified: The section name was revised from "Children's Play Structures" to "Play Structures". This nomenclature is revised through the section.		X			Clarification without code intent change.
062 G66-18	424.2 Modified: A new requirement was provided for interior finishes for play structures exceeding 10 feet in height or 600 square feet in area.			X		Interior finish must meet the requirements in Table 803.13.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
G66-18, G68-18	424.5 Modified: The area limitation was revised to 600 square feet in area for play structures without demonstrating adequate life safety approved by the building official.	X				Design flexibility change.
G66-18	424.5.1 New: Play structures exceeding the area or height limitation shall comply with Chapter 16.			X		Special investigation for play structures exceeding 600 square feet or 10 feet in height must include a structural design analysis.
Chapter 5: General Building Heights and Areas						
Section 503: General Building Height and Area Limitations						
G73-18, G136-18	503.1.4 Modified: Occupied roofs were clarified to not be included in the building height/number of stories. Exception 1 was clarified to require emergency voice/alarm clarification system notification for the occupied roof where required for the building.		X			Provides an Clarification without code intent change.
Section 504: Building Height and Number of Stories						
G75-18	Table 504.3 Modified: This table was modified to include new requirements for Type IVA, Type IVB, and Type IVC construction to determine allowable building height in feet above grade plane.		X			Necessary revision based on mass timber changes.
G77-18	504.4 Modified: Table 504.4 refers to stories above grade plane.		X			Provides an Clarification without code intent change.
G78-18, G80-18, G81-18	Table 504.4 Modified: This table was modified to include new requirements for Type IVA, Type IVB, and Type IVC construction to determine number of stories above grade plane. Stories for select Group S construction types were increased.		X			Necessary revision based on mass timber changes.
Section 506: Building Area						
G81-18, G84-18	Table 506.2 Modified: This table was modified to include new requirements for Type IVA, Type IVB, and Type IVC construction to determine allowable area factor in square feet. Allowable area factor for 1 story sprinklered Group I-3 Construction Type IIA was increased.		X			Necessary revision based on mass timber changes.
G85-18	506.2.1 Modified: This section was simplified to single-occupancy buildings for determining allowable area in square feet.		X			Clarification without code intent change.

DRAFT

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CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
G85-18	506.2.2 Modified: This section was simplified to mixed-occupancy buildings for determining allowable area in square feet.		X			Clarification and reduces number of options for designers to sift through without code intent change.
G86-18	506.3.2 Modified: Modified language was provided as new methods are used to calculate the frontage increase factor in the following section.		X			Necessary change based on how the frontage increase factor is calculated.
G86-18	506.3.3 Modified: The frontage increase factor is based on a table in lieu of the equation previously used.			X		Calculation of frontage factor has been simplified. However, the weighted average was removed so new resulting frontage increase factor can be slightly lower than previously calculated.
G86-18	506.3.3.1 New: The exception to 506.3.2 was moved to this section for Section 507 buildings frontage increase. The frontage increase factor for Section 507 Buildings is based on a table in lieu of the equation previously used.			X		Calculation of frontage factor has been simplified for Section 507 Buildings. However, the weighted average was removed so new resulting frontage increase factor will be lower.
Section 508: Mixed Use and Occupancy						
G90-18	508.1 Modified: Live/Work units are considered applicable to Section 508.		X			Clarification.
G88-18	Table 508.4 Modified: Dashed marks were replaced with their corresponding requirement.		X			Clarification without code intent change.
G89-18	508.4.4.1 Modified: Additional language was added for mass timber in fire barriers or horizontal assemblies.		X			Necessary revision based on mass timber changes.
078 G90-18	508.5 New: Live/work units, previously 419, was moved to Section 508.		X			Clarification with no change to the technical requirements.
Section 509: Incidental Uses						
G92-18	Table 509.1 Modified: Stationary storage battery systems are removed from the incidental uses table. Section number changed to Table 509.1. All references to this table are changed accordingly.	X				Mass timber incidental areas have no cost associated as they are new allowances, but by removing the stationary storage battery systems areas no

DRAFT

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CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
						longer need to meet 10% area limitation.
G89-18	509.4.1.1 New: New requirements for mass timber are provided for incidental use separations.		X			Necessary revision based on mass timber changes.
Section 510: Special Provisions						
G95-18	510.2 Modified: The exception to condition 3 has an Clarification. Additional requirements are provided to allow combustible construction for interior exit stairways in “podium” or “pedestal” buildings. All other subsequent numbers are revised appropriately.	X				Provides allowance for combustible construction to be continued below podium as long as the rating is 3 hours in podium eliminating need for transition from wood to steel.
G98-18	510.5 Modified: For Group R-1 and R-2 of Type IIIA construction has a height increase of 10 feet in Table 504.3 and one story in Table 504.4 instead of being increased to six stories and 75 feet.		X			Correction adds clarity and coordination with the Height and Area tables.
Chapter 6: Types of Construction						
Section 601: General						
FS18-18, G101-18, G102-18, G103-18, G108-18	Table 601 Modified: Additional Type IV fire-resistance ratings are provided for mass timber. A fire-resistance rating footnote was modified, and a new fire-resistance rating footnote was added based on heavy timber. Building elements were clarified to be “structural” members.		X			Necessary revision based on mass timber changes.
Section 602: Construction Classification						
G108-18	602.4 Modified: This section was nearly completely rewritten based on the addition of mass timber construction for Type IV construction.		X			Mass timber (separate from heavy timber) is a construction type allowable by code.
Section 603: Combustible Materials in Types I and II						
G112-18, G113-18, G114-18	603.1 Modified: Wood nailers for parapet flashing and roof cants are permitted as a combustible material. Group I-2 and ambulatory care cannot use fire-retardant-treated wood as fire partition for shaft enclosures. Group I-2 roof construction containing fire-retardant-treated wood must be covered by a Class A roof covering/assembly.		X			Common construction practice that is now clearly approved.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Chapter 7: Fire and Smoke Protective Features						
Section 703: Fire-Resistance Ratings and Fire Tests						
FS1-18	703.2 Modified: This section governs the fire-resistance rating for all building elements, components, or assemblies.		X			Clarification without code intent change.
FS1-18	703.2.1 New: This section governs fire-resistance ratings for tested assemblies		X			Clarification without code intent change.
FS1-18	703.2.2 Modified: This section governs fire-resistance ratings for analytical methods.		X			Clarification without code intent change.
FS1-18	703.2.3 New: Approved alternative methods for fire-resistance assemblies are relocated here.		X			Clarification without code intent change.
FS1-18, FS2-18, FS3-18	703.3.1 Modified: Section name revised to be Noncombustible materials. Additional materials can be proved to be noncombustible using ASTM E2652.		X			Design flexibility change.
FS5-18	703.6 New: Provides requirements to determine noncombustible protection time for mass timber.		X			Necessary revision based on mass timber changes.
FS6-18	703.7 New: Provides requirements for sealing adjacent mass timber elements.		X			Necessary revision based on mass timber changes.
Section 704: Fire-Resistance Ratings of Structural Members						
G103-18	704.4 Modified: Clarified members to be primary vs secondary structural members. Original intent remains the same.		X			Clarification without code intent change.
FS8-18	704.6.1 New: Secondary attachments to structural members require 12 inches of fire proofing.			X		Improves protection of primary structural members and is a best practice.
Section 705: Exterior Walls						
FS14-18	Table 705.2 Modified: Description of calculation for FSD was revised and simplified.		X			Clarification without code intent change.
FS16-18	705.2.3 Modified: This section was reorganized to provide clarity. Section name revised to Projection protection.		X			Clarification without code intent change.
FS18-18	705.5 Modified: Exterior walls are based on either Table 601 due to construction type or Table 705.5 due to fire separation distance.		X			Provides an Clarification without code intent change.
FS18-18, G108-18	Table 705.5 Modified: Table 602 has been moved to Section 705 and mass timber construction has been added to the table. All references to this table are changed accordingly.		X			Necessary revision based on mass timber changes and to consolidate exterior wall rating requirements.
Section 706: Fire Walls						

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT						
CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
FS22-18	706.1.1 Modified: Exception 2 clarifies party walls are applicable to the exception. The building official nomenclature has been revised.		X			Clarification without code intent change.
FS24-18	706.6.1 Modified: This section has been rewritten to add clarity to the stepped building approach.		X			Clarification without code intent change.
Section 707: Fire Barriers						
E102-18, FS26-18	707.4 Modified: Exterior walls where part of a required fire-resistance-rated exit passageway are included. The section and exception were slightly reorganized. Exterior walls are required to be fire-resistance rated if enclosing energy storage systems.		X			Necessary clarification and coordinates exterior wall requirements for exit passageway and exit stairway.
FS27-18	707.5 Modified: A new exception for fire barrier continuity is provided for exit passageway enclosures to be "capped" with rated ceiling.	X				Clarification for a typical approach for exit passageway protection.
Section 708: Fire Partitions						
FS32-18, FS33-18	708.1 Modified: Fire partition separations at dwelling and sleeping units in Group R-1 and R-2; exit discharge vestibule vestibules; and walls separating ambulatory care facility for adjacent spaces corridors, or tenants must comply with Section 708.		X			Coordinated IBC requirements, provides clarification for better enforcement and application.
FS37-18	708.4.1 Modified: Supporting construction exception includes fire partition separations at ambulatory care facilities.	X				Now supporting construction for 1-hr. partitions utilized to separate ambulatory care facilities is not required to be rated.
Section 709: Smoke Barriers						
FS38-18	Modified 709.4.1: Smoke barrier assemblies separating smoke compartments are clarified to separate interior areas of the building.	X				This is a design flexibility change.
Section 710: Smoke Partitions						
G42-18	Modified 710.5.2.1: Doors may have louvers in smoke partitions where allowed in Section 407.3.1.1.	X				Design flexibility change.
FS39-18	New 710.5.3: New pass-through openings are allowed in Group I-2, Condition 2 occupancies.	X				Design flexibility change.
Section 712: Vertical Openings						
G1-18, G31-18	712.1.7 Modified: This section was completely rewritten for atriums. Substance change		X			Clarification for better enforcement and

DRAFT

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CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	includes Exception 2, where balconies or stories within Group A-1, A-4 and A-5 and mezzanines that comply with Section 505 are not considered a story as it applies to atriums.					application. Entire atrium definition has been updated and coordinated to centralize requirements.
Section 713: Shaft Enclosures						
FS41-18	713.12 Modified: This section has been completely rewritten for clarity of shaft top enclosures.		X			Clarification for better enforcement and application.
FS44-18	713.13 Modified: Recycling chute have the same requirements as waste and linen chutes. Recycling nomenclature was added to all applicable sections. Section title was revised to include chute enclosures.		X			Clarification for better enforcement and application.
Section 714: Penetrations						
FS50-18	714.5.2 Modified: Exception 7 to membrane penetrations was clarified to be a maximum of 2-hour fire-resistance-rated horizontal assemblies.		X			Provides a clarification for better enforcement and application and clarifies additional code intent.
Section 715: Joints and Voids						
N/A	Modified: The section name was revised from "Fire-Resistant Joint Systems" to "Joints and Voids". This nomenclature is revised through the section. The section was reformatted and clarified with more consistence terminology. Multiple section numbers changed.		X			Clarification for better enforcement and application.
FS51-18	715.1 New: A new description for joint and void provisions is provided.		X			Provides a clarification for better enforcement and application.
FS52-18	715.2 Modified: Installation requires the system or materials not to dislodge or loosen. Voids protected at exterior curtain walls and fire-resistance-rated floor intersection must be installed with listing criteria.		X			Current requirements are incomplete. New requirements are provided to protect all joints, though code intent has not changed.
FS51-18	715.3 Modified: Name nomenclature revised to "Fire-resistance-rated assembly intersections" due to reorganization.		X			Reorganized original requirements.
FS53-18, FS54-18	715.4 Modified: Name nomenclature revised to clarify fire-resistance-rated floor intersections. Assemblies must be protected by approved perimeter fire containment systems and must provide an F rating. Fire-resistance-rated floor intersections		X			Clarification and coordination of language for better enforcement and application.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT						
CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	include both floor and floor ceiling assemblies. Voids are protected in lieu of being sealed.					
FS53-18	715.4.1 Modified: The fire test criteria exception for exterior curtain wall/fire-resistance-rated floor intersections was moved to this section with no technical change.		X			Clarification without code intent change.
FS51-18, FS52-18	715.5 Modified: Voids are intended to be protected with a rated assembly in lieu of being sealed.		X			Clarification without code intent change.
FS51-18, FS52-18, FS53-18	715.6 Modified: To clarify voids between exterior curtain wall assemblies and vertical fire barriers.		X			Clarification for better enforcement and application.
FS51-18, FS53-18, FS54-18	715.7 Modified: Section name revised to Curtain wall spandrels. All references to the previous name are revised. Referenced sections changed based on reorganization.		X			Clarification without code intent change.
Section 716: Opening Protectives						
122 FS26-18, FS56-18, FS59-18	Table 716.1(2) Modified: New double fire walls (NFPA 221) assembly type added to the opening protectives table. Multiple footnotes added and changed in the table to show new protection requirements for energy storage systems.			X		Design flexibility change and includes added requirements for energy storage system separations.
FS60-18	716.2.2.1.1 Modified: Terminated stops are prohibited on doors for smoke and draft controls.			X		Prohibits use of terminated stops on door frames for smoke and draft protection of elevator lobbies.
FS26-18	716.2.5.4.1 New: Fire-protection-rated glazing is not permitted in fire door assemblies to enclose energy storage systems.			X		Only fire-resistance-rated glazing assemblies are permitted.
FS26-18	716.3.2.1.1 New: Fire-protection-rated glazing is not permitted in fire window assemblies to enclose energy storage systems.			X		Only fire-resistance-rated glazing assemblies are permitted.
G34-18	716.4 New: Fire protective curtain assemblies are a permitted opening protective.	X				Design flexibility change.
Section 717: Ducts and Air Transfer Openings						
FS62-18	717.2 Modified: Referenced sections for damper installation editorially clarified.		X			Clarification without code intent change.
FS62-18	717.2.3 New: Dampers used in static systems shall only be used in HVAC systems that shut down during a fire.		X			Clarification for better enforcement and application.

DRAFT

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CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
FS62-18, FS64-18	717.3.1 Modified: References to dampers used in dynamic systems removed to be provided later in the section.		X			Clarification to coordinate with other code updates.
FS65-18	717.3.3.1 Modified: Section name was revised to remove device. Fire damper actuation nomenclature revised.		X			Clarification without code intent change.
FS66-18	717.4 Modified: This section was completely revised to provide clarity and add substance by pointing to IFC and NFPA requirements for testing.		X			Clarification and more restrictive requirements.
FS67-18	717.5.2 Modified: Nonmetal flexible air connectors are permitted at certain locations for Exception 3 of Fire barriers. Clarified duct systems must be fully ducted systems.	X				Clarification that some situations with flex ducts are permitted to omit fire dampers.
FS70-18	717.5.3 Modified: Provides a minimum steel wall thickness of the duct and requires an exhaust fan at the top of the shaft to meet exception 1.1. Nomenclature for minimum and outside revised.			X		Clarification and correlation. It could increase the cost by the new requirements.
FS70-18	717.5.3.1 New: Ducts providing continuous upward airflow to a shaft shall not have a damper.	X				Clarification for better enforcement and application. Dampers can be omitted in these scenarios now.
FS64-18	717.6.2.1.1 New: Dynamic system dampers are designed with fans on during a fire.			X		Clarification for better enforcement and application. Adding fans to coordinate dynamic dampers design with.
FS64-18	717.6.2.1.2 New: Static system dampers are provided with systems which are not designed to operate during a fire.	X				Clarification for better enforcement and application. By providing options for static dampers, cost impact may be reduced.
Section 718: Concealed Spaces						
137 FS72-18, FS73-18	718.2.1 Modified: Fireblocking materials includes a revised description for cellulose insulation and also includes mass timber.		X			Design flexibility change to accommodate the new mass timber options and clarifying the cellulose testing requirements.
Section 721: Prescriptive Fire Resistance						

DRAFT

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CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
FS76-18	721.1(3) Modified: Item number 5-2.1 requires 5/8" Type X gypsum wallboard in lieu of 3/8".		X			Correction of a previous typo as 3/8" Type X gypsum are not readily available.
Section 722: Calculated Fire Resistance						
FS77-18	722.1 Modified: This section is reorganized for general calculated fire resistance. Substance change allows concrete assemblies to have calculated fire resistance in accordance with PCI 124.		X			Clarification for better enforcement and application.
FS79-18	722.2.2.1.4 New: Flat plate concrete slabs with uniformly spaced hollow voids is an option for rated concrete floor and roof slabs.	X				Design flexibility change.
FS77-18	722.2.3.1 Modified: For precast prestressed concrete slab covers, the procedures now reference PCI 124.		X			Clarification for better enforcement and application.
N/A	Figure 722.5.1(2) Modified: Figure notes moved with no substance change.		X			Clarification without code intent change.
N/A	Figure 722.5.1(3) Modified: Figure notes moved with no substance change.		X			Clarification without code intent change.
N/A	722.6.2.4 Modified: Referenced section revised based on the reorganization of Section 703.		X			Clarification without code intent change.
FS81-18	722.7 New: This section provides fire-resistance ratings for mass timber.		X			Necessary revision based on mass timber reviews and testing to create new mass timber construction types.
Chapter 8: Interior Finishes						
Section 803: Wall and Ceiling Finishes						
FS84-18	803.10 Modified: Site fabricated stretch systems must comply with requirements of Class A in accordance with Section 803.1.2			X		Clarification, but if previously misinterpreted, cost could be increased. Provides more restrictive requirements for site-fabricated stretch systems.
Section 806: Decorative Materials and Trim						
FS86-18	806.9 New: Combustible lockers must be considered an interior finish and comply with Section 803.		X			Coordinated combustible locker requirements with IFC requirements. No technical changes.
Chapter 9: Fire Protection and Life Safety Systems						
Section 901: General						

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT						
CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
F97-18	901.1 Modified: Scope is clarified to include life safety systems.		X			Clarification for better enforcement and application.
F97-18	901.2 Modified: Fire protection systems is clarified to include life safety systems.		X			Clarification for better enforcement and application.
Section 903: Automatic Sprinkler Systems						
F102-18	903.2.4 Modified: The display and sale of upholstered furniture is moved to a later section for Group F-1 sprinkler system requirements.		X			Clarification for better enforcement and application.
F276-18	903.2.4.2 New: Manufacturing distilled spirits requires a sprinkler system.			X		Imposes new sprinkler requirement
F102-18	903.2.4.3 New: A sprinkler system is required if the Group F-1 fire area is used for display and sale of upholstered furniture or mattress that exceeds 2,500 square feet.		X			Clarification for better enforcement and application.
F102-18	903.2.7 Modified: The display and sale of upholstered furniture is moved to a later section for Group M sprinkler system requirements.		X			Clarification for better enforcement and application.
F102-18	903.2.7.2 New: A sprinkler system is required if the Group M fire area is used for display and sale of upholstered furniture or mattress that exceeds 5,000 square feet.		X			Clarification for better enforcement and application.
F102-18	903.2.9 Modified: The display and sale of upholstered furniture is moved to a later section for Group S-1 sprinkler system requirements.		X			Clarification for better enforcement and application.
F276-18	903.2.9.3 New: Storage distilled spirits or wine requires a sprinkler system.			X		Imposes a new sprinkler requirement.
F276-18	903.2.9.4 New: A sprinkler system is required if the Group S-1 fire area is used for display and sale of upholstered furniture or mattress that exceeds 2,500 square feet. Exception is self-service storage of one story with all storage spaces accessed by the exterior.		X			Clarification for better enforcement and application.
F110-18	903.2.10 Modified: Sprinkler systems must also be installed in open parking garages for fire areas exceeding 48,000 square feet.			X		Greater hazards of vehicles require open parking garages to need sprinkler systems.
G39-18	903.2.10.2 New: Sprinkler systems are required in mechanical-access enclosed parking garages.			X		Imposes a new sprinkler requirement.

DRAFT

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		Decrease	None	Increase		
F110-18	903.2.11.3 Modified: Open parking garages are removed from being exempt from sprinkler systems.			X		Open parking garages over 48,000 square feet will require a sprinkler system.
F112-18	903.2.11.6 Modified: Section title replaces suppression nomenclature with fire protection. Suppression nomenclature is replaced with protection.		X			Clarification without code intent change.
F112-18	Table 903.2.11.6 Modified: Section title replaces suppression nomenclature with protection.		X			Clarification without code intent change.
F117-18	903.3.1.2 Modified: The allowance for NFPA 13R systems to be permitted to be used has changed to be based on height above or below the lowest level of fire department access.			X	Substantial Cost Increase	Type 13R sprinkler systems will be permitted in significantly less buildings. Many buildings that would previously have permitted them, will now be required to have NFPA 13.
F119-18	903.3.1.2.2 Modified: Multiple conditions with corridors and balconies in the means of egress require sprinklers.			X		Additional sprinklers required in more conditions in the means of egress in NFPA 13R system buildings.
F120-18	903.3.1.2.3 Modified: Provides a clarification where the lowest level of fire department access needed to meet the provisions in Section 503.		X			Clarification for better enforcement and application. Only affects jurisdictions not currently enforcing IFC requirements.
F123-18	903.4 Modified: Clarifies that underground key or hub gate valves in roadway boxes do not need supervision.		X			Clarification for better enforcement and application.
F123-18	903.4.1 Modified: Exception moved to Section 903.4		X			Provides a necessary clarification.
Section 904: Alternative Automatic Fire-Extinguishing Systems						
F124-18, F124-18, G40-18, G55-18, F124-18	Modified: This section has reorganized Sections 904.12 through 904.14.		X			Clarification without code intent change.
F124-18	904.12 Modified: Aerosol fire-extinguishing systems are in accordance with NFPA 2010. Clarifications were provided to the description.		X			Change is consistent with NFPA 2010.
F124-18, G40-18	904.14 Modified: The section title nomenclature has been revised from systems to facilities.		X			Clarification for better enforcement and application.

DRAFT

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CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Section 905: Standpipe Systems						
171 F126-18	905.3.1 Modified: Class I standpipes are allowed in all parking garages.	X				Clarification for better enforcement and application.
FS153-18	905.3.8 Modified: This section no longer refers to rooftop gardens as it is not defined in Chapter 2. More consistent terminology used.		X			Clarification for better enforcement and application.
F128-18	905.9 Modified: Clarifies all underground key or hub gate valves in roadway boxes do not need supervision and valves for dry manual standpipes are permitted to be locked in the open position.	X				Clarification for better enforcement and application to provide consistency in market and eliminate interpretations of code.
F125-18	905.11 Modified: The fire code official can require locking caps on all standpipe outlets, instead of only dry standpipes.			X	Cap approx. \$250 each	Provides the fire code official with more options.
Section 907: Standpipe Systems						
N/A	907.2 Modified: New requirements for Group S manual fire alarm systems were provided, changing the section numbers for Section 907.2.10 through Section 907.2.23.		X			Clarification without code intent change.
F136-18	907.2.2 Modified: Group B manual fire alarm system must activate occupant notification system.		X			Provides a necessary clarification.
F139-18	907.2.3 Modified: Editorial changes are provided for Exception 1 and 3. Manual fire alarm boxes are not required in Group E occupancies where manual activation is provided from a normally occupied location in addition to the other existing requirements.		X			Provides additional requirements to coordinate with how schools are typically designed.
F141-18	907.2.10 New: Manual fire alarm systems are required in Group S public and self-storage occupancies that are more than three stories in height, except when automatic sprinkler protection is provided.			X		Imposes new manual fire alarm requirement.
F45-18, F141-18	907.2.13.2 Modified: Provides a clarification where emergency responder radio systems are in-building two-way emergency responder communication systems.		X			Clarification for better enforcement and application.
F203-18	907.2.23 Modified: Battery room requirements have been re-labeled as Energy storage system requirements.		X			Clarification for better enforcement and application.

DRAFT

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CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
F144-18	907.4 Modified: This section is rewritten and reorganized with Section 907.5 without code intent change.		X			Clarification without code intent change.
F146-18	907.4.2.4 Modified: Provides a clarification that signs are required where not monitored by an approved supervising station accordance with Section 907.6.6.		X			Clarification for better enforcement and application.
F144-18	907.5 Modified: This section is rewritten and reorganized with Section 907.4 without code intent change, excluding one substantive change see below notes.		X			New requirements for Group R-1 and R-2 occupant notification.
F144-18	907.5.1 New: Alarm activation and annunciation has been moved to this section. Annunciation shall also be activated where allowed by Section 907, at a constantly attended location.		X			Provides a clarification for better enforcement and application.
F144-18	907.5.1.1 New: Presignal feature has been moved to this section.		X			Provides an Clarification without code intent change.
F148-18	907.5.2.1.2 Modified: Maximum sound pressure has been adjusted to total sound pressure level by combining ambient sound pressure level with audible notification appliances shall not exceed 110 dBA. Audible alarm notification appliances are not required at 105 dBA average ambient noise.		X			Updated requirements to match NFPA 72 requirements. Changes 110 dBA to combination of ambient and alarm sound. Increases requirement to remove audible notification from 95 dBA to 105dBA
F144-18	907.5.2.1.3 New: This section addresses audible signal frequency in Group R-1 and R-2 occupancies.			X	Approx. \$57 per sleeping room	Provides additional requirements for Group R-1 and R-2 sleeping rooms.
F149-18	907.5.2.2.5 Modified: Emergency voice/alarm communication systems shall be provided with standby power per NFPA 72 requirements.	X				This clarifies requirement and alignment with NFPA 72.
F152-18	907.5.2.3.3 Modified: Group R-2 occupancies are clarified to support future visible alarm notification appliances in accordance with Chapter 11 of ICC A117.1. The future capability options were moved to a later section.		X			Provides an Clarification without code intent change.
F152-18	907.5.2.3.3.1 New: The future capacity (min. 5%) for visible alarm notification appliances were moved to this section and required to be wired equipment. The capability options were modified.			X		More clearly quantified existing requirement. Depending on the contractor this may be more or less excess than they previously provided.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
F112-18	907.6.4.2 Modified: For high rise building zoning, all fire protection systems must be zoned per floor.		X			Clarification for better enforcement and application of the code requirements.
F154-18	907.6.6.1 Modified: Section was completely rewritten to provide transmission of alarm signals to supervising station in accordance with NFPA 72.		X			Change provides consistency with NFPA 72
F155-18	907.6.6.2 New: Transmission of alarm signal with monitor it yourself to a public safety answering point is not permitted unless allowed by the fire code official. The following section numbers were revised accordingly.		X			Provides consistency with NFPA 72. Requires fire code official approval for monitor it yourself transmission.
Section 908: Emergency Alarm Systems						
F159-18	908.3 New: Emergency alarm system signals that interface with the Fire Alarm Control Unit shall be supervisory signals.		X			Provides requirement for other emergency alarm systems interfacing with the FACP and only affects internal programming.
Section 909: Smoke Control Systems						
F161-18	909.17 Modified: All components that operate a smoke control system must achieve final operating state within 90 seconds of FACP detection signal.		X			Provides enforceable requirement for smoke control components activating, but it is anticipated that all components of smoke control system can easily configure and meet these requirements.
FS90-18	909.20 Modified: Smokeproof enclosures include pressurized stairs or pressurized entrance vestibules as an alternative.	X				Provides a clarification for better enforcement and application.
FS90-18	909.20.6 New: New requirements for smokeproof enclosures using a pressurized stair and pressurized entrance vestibule.	X				Use of pressurized vestibule and stairwell helps to meet minimum pressurization requirements without additional ducts/ fans.
FS90-18	909.20.7 Modified: As 906.20.6 is new, this section number was revised accordingly, and Section 906.20.6 is also referenced for ventilating equipment.		X			Provides a clarification for better enforcement and application.
Section 910: Smoke and Heat Removal						
F165-18	910.3.4 New: New requirements for vent operation are provided for smoke and heat		X			Code intent remains the same and is coordinated

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	vents to be operated by automatic and manual means.					with NFPA 2014 installation requirements.
F166-18	910.3.5 New: New requirements for fusible link temperature rating are provided for smoke and heat vents at 360 degrees per FM guidance and tests.			X		Smoke and heat vents are required to have a temperature rating of 360° F when installed in sprinklered area and operate by fusible link, but typically they were between 350° and 400°F.
Section 911: Fire Command Center						
F42-18	911.1 New: Fire Command Center is now required at all F-1 and S-1 buildings more than 500,000 square feet.			X	Approx. 0.06%	Types of buildings can be just as difficult for firefighting as high-rises. Provides a safe location for fire fighters with all equipment needed to manage the building.
F42-18	911.1.1 Modified: Nomenclature for accessibility of was revised for location and access to the fire command center.		X			Clarification without code intent change.
F42-18	911.1.3 Modified: Where the fire command center is required, it must be a minimum 96 square feet and 8 feet in both directions			X		Provides a minimum size for the fire command center
F42-18	911.1.7 New: New requirements for fire command center identification is provided.			X	Minor	Identification by an easily visible sign reading "FIRE COMMAND CENTER" located on the door is required.
Section 913: Fire Pumps						
F172-18	913.1 Modified: Fire pump for fire protection system shall be installed with this section and NFPA 20 except pump for NFPA 13D sprinkler systems, or Section P2904 of the IRC.		X			Clarifies original code intent and coordinates with NFPA 13D requirements.
F174-18	913.2.2 Modified: Cables supplying fire pumps may be protected using cable or raceways incased in a minimum of 2 inches of concrete except where a fire pump room or generator room is separated by fire-resistance-rated construction.		X			This clarifies an option already permitted per NEC to protect the fire pump circuits.
Section 918: Emergency Responder Communication Coverage						
F45-18	Modified: The section name was revised from "Emergency Responder Radio Coverage" to "Emergency Responder Communication		X			This change is consistent with Section 510 of the IFC.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	Coverage.” This nomenclature is revised through the section.					
F45-18	918.1 Modified: Provides a clarification where emergency responder radio systems are in-building two-way emergency responder communication systems.		X			This change is consistent with Section 510 of the IFC. Requirements are the same and editorial in nature.
Chapter 10: Means of Egress						
Section 1003: General Means of Egress						
E4-18, E37-18	1003.5 Modified: Exception 1 to Elevation change was completely revised to steps at exterior doors complying with Section 1010.1.4.		X			Coordinated code sections within IBC and points to new exterior door requirements
Section 1006: Number of Exits and Exit Access Doorways						
E11-18	1006.2.1 Modified: Unoccupied mechanical rooms and penthouses are not required to comply with common path measurements.	X				Clarifies intent that unoccupied roofs must only meet travel distance to an exit requirement. Additional exits no longer required for these areas to meet common path of travel.
E13-18	1006.2.2 Modified: Egress based on use is clarified to include the numbers, configurations, and types of components of exits or access to exits.		X			Clarification for better enforcement and application.
E15-18 PART I	1006.2.2.2 Modified: Exits and exit access doorways shall be equipped with panic hardware for refrigeration machinery rooms.			X		Provides additional protection to occupants due to risk of rapid release of hazardous or asphyxiant gases.
E17-18, E37-18	1006.2.2.4 New: Old text deleted and replaced with electrical room requirements. Directs to specific sections of NFPA 70 and required panic hardware per 1010.1.10.1.		X			This additional code clarifies existing NFPA 70 requirements.
E18-18	1006.3 Deleted: Stairways serving more than one story was relocated to a later section.		X			Clarifies existing code intent to streamline design and permit process.
E18-18	1006.3.1 New: The occupant load from stairways serving more than one story was relocated to this section. The following section numbers were revised accordingly.		X			Clarifies existing code intent to streamline design and permit process.
E18-18	1006.3.2 New: Section name nomenclature revised to path of egress travel. New exceptions are provided for exit access		X			Clarifies existing code intent to streamline design and permit process.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
	stairways and ramps within an atrium and exterior exit access stairways and ramps between occupied roofs. Clarifies that a stair in atrium that is not part of the means of egress is always acceptable and not limited to the one adjacent story criteria. And an exit access stair from occupiable roof is permitted to pass through more than one adjacent story.					
E18-18, E24-18	1006.3.4 Modified: Common path of egress nomenclature was revised to exit access.		X			Provides consistency throughout code for use of common path of travel and exit access travel distance.
E18-18, E24-18	Table 1006.3.4(1) Modified: Common path of egress nomenclature was revised to exit access.		X			Provides consistency throughout code for use of common path of travel and exit access travel distance.
E18-18, E24-18	Table 1006.3.4(2) Modified: Common path of egress nomenclature was revised to exit access.		X			Provides consistency throughout code for use of common path of travel and exit access travel distance.
Section 1008: Means of Egress Illumination						
	1008.2.1 New: Along exit access stairways and exit stairways, illumination level shall be 10 foot-candles when the stairway is in use.			X	Minimal increase	Clarification for minimum lighting required under normal power already required by NFPA 1 and 101. This level is not anticipated at all times the building is occupied.
E28-18	1008.3.1 Modified: Means of egress nomenclature was revised to exit or access to exits.		X			Clarification without code intent change.
E28-18, E37-18	1008.3.2 Modified: Means of egress nomenclature was revised to exit or access to exits.		X			Clarification without code intent change.
Section 1009: Accessible Means of Egress						
E30-18	1009.2.1 Modified: Elevators are required where an occupied roof is four or more stories above a level of exit discharge.			X	Only increase if not how currently interpreted.	Clarification of original code intent for occupied roofs to be provided accessible elevators if above 3 rd story of a building. Depending on original local code interpretation, this is no project cost or added cost

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
E33-18	1009.6.2 Modified: An interior area of refuge is permitted on the level of exit discharge with direct access to an exterior exit door.	X			Only decrease if not how currently interpreted.	This clarifies design intent for interior areas of refuge being permitted in lieu of an exterior area of rescue assistance. Code intent has not changed.
E34-18	1009.6.3 Modified: Area of refuge size is increased to be 52 inches rather than 48 inches, for each 200 occupants or portion thereof.			X		Size of area of refuge was increased from 30"x48" to 30"x52" to be consistent with 2017 ICC A117.1.
E36-18	1009.8.1 Modified: The two -way communication must be to an approved supervising station.			X	Only increased depending on current interpretation.	Clarification for better enforcement and application as "approved supervising station" is defined in chapter 2.
Section 1010: Doors, Gates, and Turnstiles						
E37-18	Modified: This section was nearly completely reorganized. Very few section numbers remained the same.		X			Provided to group like items together, no technical changes unless otherwise noted.
E38-18	Modified: The sections are adjusted to provide proper legal charging language for sections that were lacking including: 1020.1, 1024.1, 1026.1, 1027.1, 1028.1, 1029, 1029.1, 1029.2, 1029.3.		X			No technical changes provided, language updated for consistency and to help with legal adoption of IBC codes locally and is editorial in nature.
E37-18	1010.1 Modified: Section title nomenclature revised to General. This section was almost completely revised to add clarity and substance.		X			Clarification for better enforcement and application.
E37-18, E39-18, E40-18	1010.1.1 Modified: The maximum width of a swinging door leaf is not limited. Additionally, the minimum clear opening width to non-accessible single-user shower or sauna compartments, toilet stalls or dressing, fitting, or changing rooms is 20 inches.	X				Maximum size of doors is already accommodated by other door requirements (force, etc.) but there will be a decrease due to the reduced minimum clear openings to 20 inches.
E41-18	1010.1.1.1 Modified: Section name nomenclature revised to be opening in lieu of width. Overhead door stops, power door operators, and electromagnetic door locks are permitted to project into the clear opening.		X			Provides common use terminology for door hardware and clarifies allowances for other types of typically installed doors. This is already a typical practice.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
232 E37-18, E42-18	1010.1.2 Modified: Section nomenclature revised to be egress door types. Side-hinged swing door, pivoted door, or balanced door types are applicable.		X			Balanced doors are clarified as acceptable egress door, which is consistent with the intent of the original provisions.
E42-18	1010.1.2.1 Modified: Side-hinged swing door, pivoted door, or balanced door types as applicable shall swing in the direction of egress travel.		X			Balanced doors are clarified as acceptable egress door, which is consistent with the intent of the original provisions.
E44-18	1010.1.3 Modified: This section was completely rewritten. Door opening force was removed and replaced with Forced to unlatch and open doors. Revised requirements are provided for required forces.		X			Updates and clarified door force and unlatching requirements to coordinate with accessibility and 2017 ICC A117.1 requirements.
E44-18	1010.1.3.2 New: New requirements are provided for manual horizontal sliding doors.			X		Latch for manual horizontal sliding door to prevent the door from rebounding open when closed and coordinates with CMS requirements for when these types of doors are provided and required to latch.
E4-18	1010.1.5 Modified: Additional language provided regarding step down permitted at exterior doors in Group F, H, R-2, and S occupancies not part of an accessible route where the occupant load is low and trip hazard unlikely.			X		Language coincides with the previous 2018 commentary removing the exception previously associated with Group R-3 and U occupancies.
E15-18 Part I	1010.1.10 Modified: Additional language added to coordinate with new requirements for panic hardware serving refrigeration machinery rooms.		X			No impact and added language in a separate section and this language is just coordination.
E37-18, E54-18	1010.2.1 Modified: The unlatching for egress doors shall require not more than one motion in a single linear or rotational direction to release all latching and locking devices.			X		Clarification to reduce ambiguity during the design, construction and code inspection process and introduces the BHMA A156.41 requirements, which mostly affect manufacturers but may trickle down to consumers.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
E37-18, E52-18	1010.2.4 Modified: Locks and latches are permitted where occupants must egress from an exterior space through the building (other than egress courts), doors at balconies, decks or other exterior spaces serving individual dwelling or sleeping units, or sleeping units, private office spaces, or Group I-1, Condition 2 and Group I-2 occupancies where persons pose a security threat.		X			Design flexibility change.
E37-18, E48-18	1010.2.8 Modified: Locking arrangements in educational occupancies and Group I-4 occupancies must comply with modifications to fire door assemblies in accordance with NFPA 80, in addition to the other existing requirements. Remote locking or unlocking of doors from an approved location shall be permitted. Clarifications provided.		X			Change correlates recent changes to other NFPA and ICC codes associated with Educational Occupancy locking arrangements. No technical changes are provided.
E37-18, E53-18	1010.2.9 Modified: Exit access doors serving occupied exterior areas and courtrooms are permitted to be locked.			X	Increases initial construction costs, but long term less expensive to avoid violations.	Locks are often provided in these locations, so this new requirement provides a safe, reasonable, and consistent approach for the safety of people occupying outdoor areas who must re-enter the building for egress.
E15-18 PART 1	1010.2.9.1 New: Panic hardware or fire exit hardware is required in refrigeration machinery rooms.			X		Additional protection to occupants due to risk of rapid release of hazardous or asphyxiant gases.
E64-18	1010.2.9.2 New: Panic hardware or fire exit hardware and door swing are clarified based on electrical equipment.		X			Aligns code requirements in IBC with NFPA 70 requirements, which were already required per Chapter 27 of the IBC.
E37-18, E61-18	1010.2.12 Modified: Emergency lighting is required on the egress side of the door for electrically locked egress doors with sensor release.			X		Additional requirements to ensure occupants are provided with minimum egress illumination for door operation and reading the sign.
E37-18, E58-18	1010.2.13 Modified: Delayed egress is permitted for courtrooms in Group A-3 and B occupancies.		X			Clarification of the current code intent with no change to technical criteria.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
E37-18, E46-18	1010.3.1 Modified: Emergency stop switches are required to be provided between 34 inches and 48 inches above the floor.			X		Emergency stop switch height AFF revised to be between 34" and 48" from 24" and 48" to make requirement consistent with latest addition of ANSI/BHMA A156.27.
E37-18, E47-18	1010.3.3 Modified: An Clarification was provided for Criteria 2 noting that the door is only required to be openable from the egress side.		X			Clarification for original design intent and design alternative to meet security needs of particular building.
E28-18, E37-18	1010.3.4 Modified: Means of egress nomenclature was revised to exit or access to exits.		X			Provides an Clarification without code intent change.
F14-18 PART 1	1010.5.2 Modified: Security access turnstiles may be utilized in buildings with an approved, supervised automatic sprinkler system.		X			Clarification without code intent change.
Section 1011: Stairways						
E66-18	1011.5.2 Modified: Stair riser heights are required to be measured between the stairway landing and the adjacent tread.		X			Clarification for better enforcement and application.
E68-18, E69-18, E70-18	1011.6 Modified: A door shall not project more than 7 inches into the required width of a landing. An exception to the measurement of stairway landings is provided for intermediate landings of curved stairway. An exception is provided for the minimum landing depth for stairway landings where a landing turns 90 degrees or more.	X	X			Clarifies original intent of projections into the required width. Clarification for how to measure landings and design of curved stairways. Clarification of stair landing design intent, which has previously been in commentary noting that landings need not be rectangular.
G95-18	1011.7 Modified: Interior exit stairways may be combustibile in podium style buildings in accordance with Section 510.2. Section was reorganized.	X				Provides allowance for combustibile construction to be continued below podium as long as the rating is 3 hours in podium eliminating need for transition from wood to steel.
E71-18	1011.11 Modified: One or two steps necessary to get to a stationary platform lift do not need handrails provided they meet certain criteria.	X				Design flexibility change, for very specific use platform lifts typically used in court rooms.
Section 1013: Exit Signs						

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TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT						
CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
E72-8, E73-18	1013.4 Modified: Where exit signs are provided at a horizontal exit or any other existing condition, they must have raised characters and braille exit signs.			X		Clarification of original design intent for these signs and clarifies that horizontal exits are considered exits. No technical changes provided.
Section 1015: Guards						
E77-18	1015.2 Modified: Guards are not required on the loading side of the station platforms on fixed guideways transit or passenger rail systems.		X			This proposal adds the exception that is commonly recognized and designed per NFPA 130.
E86-18	1015.7 Modified: The guard shall extend 30 inches beyond each end of roof access hatch parallel to the roof edge when within 10 ft of the roof edge.			X		Provides additional location where the guard is required for true life safety.
E80-18	1015.8 Modified: The bottom of the clear opening of an operable window is the point of measurement when child fall protection is required.		X			Clarification of how to measure height, but general design requirements are still the same.
Section 1016: Exit Access						
E85-18	1016.2 Modified: Where access to two or more exits or exit access doorways is required, one required exit cannot travel through an enclosed elevator lobby. If a tenant space only requires a single exit access path, it is permitted to go through the elevator lobby.		X			Clarification of code intent, general requirements are still the same.
Section 1017: Exit Access Travel Distance						
E86-18	1017.3 Modified: Where more than one exit is required, exit access travel distance shall be measured to the nearest exit.		X			Clarification of code intent, general requirements are still the same.
G31-18	1017.3.2 New: Provides exit access travel distance requirements for atriums and cannot be greater than 200 feet.		X			Relocates atrium egress requirements to Ch 10, no major technical changes.
Section 1019: Exit Access Stairways and Ramps						
E18-18, E88-18, E89-18	1019.3 Modified: Exit access stairways and ramps that only communicate between two adjacent stories do not require a shaft enclosure. Exterior exit access stairways or ramps between occupied roofs do not require a shaft enclosure. Clarifications were provided.	X				Clarification for better enforcement and application.
Section 1020: Corridors						

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
E38-18, FS18-18	1020.1 New: A new description for corridors is provided with no technical change. The following section numbers were revised accordingly.		X			Clarification for better enforcement and application.
E38-18, E91-18	1020.5 Modified: Group I-2, Condition 2 dead end corridors cannot exceed 30 feet if it is not serving patient rooms or patient treatment rooms		X			More flexible dead-end requirements when outside of patient care areas to become more consistent with <i>NFPA 101</i> as adopted by CMS
Section 1023: Interior Exit Stairways and Ramps						
E94-18, G95-18	1023.2 Modified: Provides clarification that fire-resistance-rated construction applies to enclosures of interior exit stairways. Interior exit stairways for podium buildings in accordance with Section 510.2 is provided as a new exception.		X			Clarification for better enforcement and application.
E98-18	1023.5 Modified: Structural elements supporting the interior exit stairway, or ramp, or enclosure can penetrate into the interior exit stairway or ramp enclosure.		X			Clarification for better enforcement and application.
N/A	1023.8 Modified: Section title nomenclature revised to barrier at level of exit discharge.		X			Clarification without code intent change.
E72-18	1023.9 Modified: The bottom of the stairway identification sign is required to be at least 5 feet above the floor landing and readily visible with open or closed doors. Floor level stairway identification signs were relocated to a later section.		X			Code clarification and reorganization but signs are already required by code.
E72-18	1023.11 New: Where provided floor level signs are required to be tactile floor-level signs with braille.		X			Code clarification and reorganization but signs are already required by code.
Section 1024: Exit Passageways						
E38-18	1024.1 Modified: Section title nomenclature revised to general.		X			Clarification without code intent change.
E101-18	1024.6 Modified: Equipment and ductwork necessary for independent ventilation can penetrate into or through and exit passageway.		X			Clarification for better enforcement and application and coordination with exit enclosure requirements.
E102-18	1024.8 New: New requirements are provided for exit passageway exterior walls to be consistent with stair exposure criteria.			X		Clarifies that exterior walls of exit passageway need to meet the same requirements as a stair enclosure.
Section 1026: Horizontal Exits						

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TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
E38-18	1026.1 Modified: Section title nomenclature revised to General.		X			Provides an Clarification without code intent change.
Section 1027: Exterior Exit Stairways and Ramps						
E38-38	1027.1 Modified: Section title nomenclature revised to General. Description for exterior exit stairways and ramps was clarified.		X			Provides clarification for better enforcement and application.
Section 1028: Exit Discharge						
E38-18	1028.1 New: A new description for exit discharge is provided with multiple section numbers revised accordingly.		X			Provides clarification for better enforcement and application.
E38-18, G31-18	1028.2 Modified: Atriums are included as an area for Exception 1 for interior exit discharge.		X			Provides clarification for better enforcement and application.
Section 1029: Egress Courts						
E38-18	New: This section completely revised, previously was 1028.4, for clarity and substance.		X			Provides clarification for better enforcement and application.
Section 1030: Assembly						
E38-18	Modified: This section number was revised based on the addition of Section 1029.		X			Clarification without code intent change.
E38-18, E106-18	1030.16 Modified: Provides additional requirements for stepped aisles that require two handrails with seating on one side.			X		Anticipated to assist with design of social stairs which are becoming more popular.
E38-18	1030.16.1 Modified: Section name nomenclature revised to include mid-aisle. Where two handrails are required for a stepped aisle, the mid handrail is discontinuous.			X		Provides better language for the stepped aisles that require two handrails due to the changes of the previous section.
Section 1031: Emergency Escape and Rescue:						
E38-18	Modified: This section number was revised based on the addition of Section 1029.		X			Clarification without code intent change.
E107-18	1031.1 New: A new description for emergency escape and rescue is provided. The following section numbers were revised accordingly.		X			Clarification for better enforcement and application and coordination of IRC and IBC requirements.
282 E38-18, E107-18	1031.2 Modified: Storm shelters are not required to comply with for emergency escape and rescue requirements. Clarifications were provided.		X			Clarification for better enforcement and application and coordination of IRC and IBC requirements.
E107-18	1031.3 New: New requirements are provided for emergency escape and rescue openings.		X			Clarification for better enforcement and application and coordination of IRC and IBC requirements.

DRAFT

TABLE 9. FIRE PROTECTION AND LIFE SAFETY CHANGE COST IMPACT

CODE CHANGE #	FIRE PROTECTION AND LIFE SAFETY CHANGE SUMMARY	COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
E110-18	1031.4 New: New requirements are provided for emergency escape and rescue doors to be swinging or sliding door.		X			Clarification for better enforcement and application and coordination of IRC and IBC requirements.
E38-18, E107-18	1031.5 Modified: Section name nomenclature was revised to area wells from window wells. The section was nearly completely rewritten to add clarity and substance.		X			Clarification for better enforcement and application and coordination of IRC and IBC requirements.
E38-18, E107-18, E110-18, E111-18	1031.6 Modified: Most changes are editorial in nature for clarification. A substantive change includes the reference to existing buildings is removed.			X		Coordination of IRC and IBC requirements and addition of stair/ ladder requirements.

APPENDIX J

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact						
CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
S1-18	<p>[P] 1502.1 General. Design and installation of roof drainage systems shall comply with <u>this Section and Section 1502.1611</u> of this code and <u>Sections 1106 and 1108, as applicable, and Chapter 11</u> of the International Plumbing Code.</p> <p>[P] 1502.2 Secondary (emergency overflow) drains or scuppers. Where roof drains are required, secondary (emergency overflow) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. The installation and sizing of secondary emergency overflow drains, leaders and conductors shall comply with <u>Sections 1106 and 1108, as applicable, Section 1611 of this code and Chapter 11</u> of the International Plumbing Code.</p>		X			Clarification
S3-18	<p>[BF] 1505.8 Building-integrated photovoltaic (BIPV) products. Building-integrated photovoltaic BIPV products installed as the roof covering shall be tested, listed and labeled for fire classification in accordance with Section 1505.1.</p> <p>[BF] 1505.9 Rooftop-mounted photovoltaic (PV) panel systems. Rooftop rack-mounted photovoltaic (PV) panel systems shall be tested, listed and identified with a fire classification in accordance with UL 1703 and UL 2703. The fire classification shall comply with Table 1505.1 based on the type of construction of the building.</p>		X			Clarification
S4-18	<p>1505.9 Roof top mounted photovoltaic panel systems. Rooftop rack-mounted photovoltaic panel systems shall be tested, listed and identified with a fire classification in accordance with UL 1703 and UL 2703. Listed systems shall include roof mounting hardware. <u>Listed systems shall be installed in accordance with the manufacturer's installation instructions and its listing.</u> The fire classification shall comply with Table 1505.1 based on the type of construction of the building.</p>			X	Unknown-UL input awaited	Clarification
S9-18	<p>[BF] 1508.1 General. The use of above-deck thermal insulation shall be permitted provided that such insulation is covered with an approved roof covering and passes the tests of NFPA 276 or UL 1256 when tested as an assembly.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Foam plastic roof insulation shall conform to the material and installation requirements of Chapter 26. 2. Where a concrete <u>or composite metal and concrete</u> roof deck is used and the above-deck thermal insulation is covered with an approved roof covering. 		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
S11-18	<p>[BG] 1510.2.4 Type of construction. Penthouses shall be constructed with walls, floors and roofs of building elements as required for the type of construction of the building on which such penthouses are built.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. On buildings of Type I construction, the exterior walls and roofs of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall not be required to have a fire-resistance rating. 2. On buildings of Type I construction two stories or less in height above grade plane or of Type II construction, the exterior walls and roofs of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602 and be constructed of fire-retardant-treated wood. The exterior walls and roofs of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be constructed of fire-retardant-treated wood and shall not be required to have a fire-resistance rating. Interior framing and walls shall be permitted to be constructed of fire-retardant-treated wood. 3. On buildings of Type III, IV or V construction, the exterior walls of penthouses with a fire separation distance greater than 5 feet (1524 mm) and less than 20 feet (6096 mm) shall be permitted to have not less than a 1-hour fire-resistance rating or a lesser fire-resistance rating as required by Table 602. On buildings of Type III, IV or VA construction, the exterior walls of penthouses with a fire separation distance of 20 feet (6096 mm) or greater shall be permitted to be of heavy timber construction complying with Sections 602.4 and 2304.11 or noncombustible construction or fire-retardant-treated wood and shall not be required to have a fire-resistance rating. 	X				Clarification
S13-18	<p>[BG] 1510.7 Photovoltaic panels and modules. Rooftop-mounted photovoltaic panels and modules shall be designed in accordance with this section.</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
	<p>[BG] 1510.7.1 Fire classification. Rooftop-mounted photovoltaic panels and modules shall have the fire classification in accordance with Section 1505.9.</p> <p>[BG] 1510.7.2 Photovoltaic panels and modules. Rooftop-mounted photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703 and shall be installed in accordance with the manufacturer's instructions.</p> <p style="text-align: center;">SECTION 1512 PHOTOVOLTAIC PANELS AND MODULES</p> <p>1512.1 Photovoltaic panels and modules. Photovoltaic panels and modules installed on a roof or as an integral part of a roof assembly shall comply with the requirements of this code and the International Fire Code.</p>					
S14-18	<p>[BF] 1705.14 Sprayed fire-resistant materials. Special inspections and tests of sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.14.1 through 1705.14.6. Special inspections shall be based on the fire-resistance design as designated in the approved construction documents. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. Special inspections and tests shall be performed after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, <u>and before concealed</u>, where applicable.</p>		X			Clarification
S15-18	<p>[BF] 1705.14 Sprayed fire-resistant materials. Special inspections and tests of sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.14.1 through 1705.14.6. Special inspections shall be based on the fire-resistance design as designated in the approved construction documents. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. Special inspections and tests shall be performed <u>during construction with an addition visual inspection</u> after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, where applicable.</p>		X			Clarification
S16-18	<p>[BF] 1705.14 Sprayed fire-resistant materials. Special inspections and tests of sprayed fire-resistant materials applied to floor, roof and wall assemblies and structural members shall be performed in accordance with Sections 1705.14.1 through 1705.14.6. Special</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase						
Sub Code:										
	inspections shall be based on the fire-resistance design as designated in the approved construction documents. The tests set forth in this section shall be based on samplings from specific floor, roof and wall assemblies and structural members. Special inspections and tests shall be performed after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, where applicable. <u>The required sample size shall not exceed 110% of that specified by the referenced standards in Sections 1705.14.4.1 through 1704.14.4.9.</u>									
S19-18	1705.15 Mastic and intumescent fire-resistant coatings. Special inspections and tests for mastic and intumescent fire-resistant coatings applied to structural elements and decks shall be performed in accordance with AWCI 12-B. Special inspections and tests shall be based on the fire-resistance design as designated in the approved construction documents. Special Inspections and tests shall be performed <u>during construction with an additional visual inspection</u> after the rough installation of electrical, automatic sprinkler, mechanical and plumbing systems and suspension systems for ceilings, and before concealed, where applicable.		X			Clarification				
S21-18	[BF] 1705.17 Fire-resistant penetrations and joints. In high-rise buildings or in buildings assigned to Risk Category III or IV, <u>or fire areas containing Group R occupancies with an occupant load greater than 250</u> , special inspections for through-penetrations, membrane penetration firestops, fire-resistant joint systems and perimeter fire barrier systems that are tested and listed in accordance with Sections 714.4.1.2, 714.5.1.2, 715.3 and 715.4 shall be in accordance with Section 1705.17.1 or 1705.17.2.			X	Minimal depending on QC	Clarification				
FS1-19	[BS] PORCELAIN TILE. File that conforms to the requirements of ANSI A137.1.3, Section 3.0 for ceramic <u>Ceramic</u> tile having an absorption of 0.5 percent or less in accordance with ANSI A137.1, Section 4.1 and Section 6.1 Table 10, Table 10 or ANSI A137.3, Tables 4 or 5. TABLE 1404.2 MINIMUM THICKNESS OF WEATHER COVERINGS <i>Portions of table not shown remain unchanged.</i> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">COVERING TYPE</th> <th style="width: 50%;">MINIMUM THICKNESS (inches)</th> </tr> </thead> <tbody> <tr> <td>Porcelain tile</td> <td>0.25 0.125 nominal</td> </tr> </tbody> </table> For SI: 1 inch = 25.4 mm, 1 ounce = 28.35 g, 1 square foot = 0.093 m ² . a. Wood siding of thicknesses less than 0.5 inch shall be placed over sheathing that conforms to Section 2304.6. b. Exclusive of texture. c. As measured at the bottom of decorative grooves. d. 16 ounces per square foot for cold-rolled copper and lead-coated	COVERING TYPE	MINIMUM THICKNESS (inches)	Porcelain tile	0.25 0.125 nominal		X			Clarification
COVERING TYPE	MINIMUM THICKNESS (inches)									
Porcelain tile	0.25 0.125 nominal									

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>copper, 12 ounces per square foot for copper shingles, high-yield copper and lead-coated high-yield copper.</p> <p>[BS] 1404.10.2 Exterior adhered masonry veneers—porcelain tile. Adhered units <u>weighing more than 3.5 pounds per square foot (0.17 kN/m²) shall not exceed 5/8 1/2 inch (15.8 mm) thickness and 24 inches (610 mm) in any face dimension nor more than 3 9 square feet (0.28 (0.8 m²) in total face area and shall not weigh more than 9 6 pounds psf (0.43 6 pounds per square foot (0.29 kN/m²)). Adhered units weighing less than or equal to 3.5 pounds per square foot (0.17 kN/m²) shall not exceed 72 inches (1829 mm) in any face dimension nor more than 17.5 square feet (1.6 m²) in total face area. Porcelain tile shall be adhered to an approved backing system.</u></p>					
FS2-19	<p>Nailable Substrate. A product or material such as framing, sheathing, or furring, composed of wood or wood-based materials or other materials providing <u>equivalent</u> fastener withdrawal resistance.</p> <p>[BS] 1404.14.1 Application. The siding shall be applied over sheathing or materials listed in Section 2304.6. Siding shall be applied to conform to the <i>water-resistive barrier</i> requirements in Section 1402. Siding and accessories shall be installed in accordance with <i>approved</i> manufacturer’s instructions. Unless otherwise specified in the <i>approved</i> manufacturer’s instructions, nails used to fasten the siding and accessories shall have a minimum 0.313-inch (7.9 mm) head diameter and 1/8-inch (3.18 mm) shank diameter. The nails shall be corrosion resistant and shall be long enough to penetrate a nailable <u>substrate</u> not less than 3/4 1/2 inch (19 mm) <u>1 1/4</u>- inch (32 mm). For cold-formed steel light-frame construction, corrosion-resistant fasteners shall be used. Screw fasteners shall penetrate the cold-formed steel framing not fewer than three exposed threads. Other fasteners shall be installed in accordance with the <i>approved</i> construction documents and manufacturer’s instructions. Where the siding is installed horizontally, the fastener spacing shall not exceed 16 inches (406 mm) horizontally and 12 inches (305 mm) vertically. Where the siding is installed vertically, the fastener spacing shall not exceed 12 inches (305 mm) horizontally and 12 inches (305 mm) vertically.</p>		X		Clarification	
FS3-19	<p>[BS] 1404.14 Vinyl siding. Vinyl siding conforming to the requirements of this section and complying with ASTM D3679 shall be permitted on <i>exterior walls</i> where the design wind pressure determined in accordance with Section 1609.3.1 <u>1609</u> does not exceed 30 psf. Where the design wind pressure exceeds 30 psf, tests</p>			X	Minimal	Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p>or calculations indicating compliance with Chapter 16 shall be submitted. Vinyl siding shall be secured to the building so as to provide weather protection for the <i>exterior walls</i> of the building.</p> <p>1404.14.1.1 Fasteners and fastener penetration for wood construction. Unless otherwise specified in the approved manufacturer's instructions, nails used to fasten the siding and accessories shall be corrosion resistant and have a minimum 0.313-inch (7.9 mm) head diameter and 1/8-inch (3.18 mm) shank diameter. The total penetrative penetration into nailable substrate shall be not less than at least <u>at least 1 1/4 inch</u> inches (32 mm).</p> <p>1404.14.1.2 Fasteners and fastener penetration for cold-formed steel light frame construction. For cold-formed steel light-frame light framed construction, corrosion resistant fasteners shall be used. Screw fasteners shall penetrate the cold-formed steel framing at least three exposed threads through the steel with a <u>minimum of three exposed threads</u>. Other fasteners shall be installed in accordance with the approved construction documents and manufacturer's instructions.</p> <p>1404.14.1.2.3 Fastener spacing. Unless specified otherwise by the <u>approved</u> manufacturer's instructions, fasteners shall be installed in the center <u>middle third</u> of the slots of the nail hem and maximum spacing between fasteners shall be 16 inches (406 mm) for horizontal siding and 12 inches (305 mm) for vertical siding.</p>					
G2-19	<p>[BS] DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:</p> <ol style="list-style-type: none"> 1. The building or structure has collapsed, has partially collapsed, has moved off its foundation or lacks the necessary support of the ground. 2. There exists a significant risk of collapse, detachment or dislodgment of any portion, member, appurtenance or ornamentation of the building or structure under service loads, permanent, routine, or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake, or other environmental loads when such loads are imminent. <p>[BS] DANGEROUS. Any building, structure or portion thereof that meets any of the conditions described below shall be deemed dangerous:</p>		X			Clarification

DRAFT

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1. The building or structure has collapsed, has partially collapsed, has moved off its foundation, or lacks the necessary support of the ground.</p> <p>2. There exists a significant risk of collapse, detachment or dislodgement of any portion, member, appurtenance or ornamentation of the building or structure under service loads permanent, routine, or frequent loads; under actual loads already in effect; or under snow, wind, rain, flood, earthquake, or other environmental loads when such loads are imminent.</p>					
G3-19	[BS] DEAD LOAD. The weight of materials of construction incorporated into the building, <u>including, but</u> not limited		X			Clarification
G4-19 Part I	<p>GLASS MAT GYPSUM PANEL. A gypsum panel consisting of a <u>noncombustible core primarily of gypsum, surfaced with glass mat partially or completely embedded in the core.</u></p> <p>GYPSUM SHEATHING. Gypsum panel products specifically <u>manufactured with enhanced water resistance for use as a substrate for exterior surface materials.</u></p> <p>GYPSUM WALLBOARD. A gypsum board used primarily as an interior surfacing for building structures.</p>		X			Necessary addition for clarification
G4-19 Part II	<p>GLASS MAT GYPSUM PANEL. A gypsum panel consisting of a <u>noncombustible core primarily of gypsum, surfaced with glass mat partially or completely embedded in the core.</u></p> <p>GYPSUM SHEATHING. Gypsum panel products specifically <u>manufactured with enhanced water resistance for use as a substrate for exterior surface materials.</u></p> <p>GYPSUM WALLBOARD. A gypsum board used primarily as an interior surfacing for building structures.</p>		X			Clarification
G5-19	<p>[BS] GYPSUM BOARD. The generic name for a family of sheet products consisting of a noncombustible core primarily of gypsum with paper surfacing. Gypsum wallboard, gypsum sheathing, gypsum base for gypsum veneer plaster, exterior gypsum soffit board, predecorated gypsum board and water-resistant gypsum backing board complying with the standards listed in Tables 2506.2, 2507.2 and Chapter 35 are types of gypsum board.</p> <p>[BS] GYPSUM PANEL PRODUCT. The general name for a family of sheet products consisting essentially of gypsum <u>complying with the standards specified in Tables 2506.2 and 2507.2, and Chapter 35.</u></p>		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p><u>Gypsum board and glass mat gypsum panels are examples of gypsum panel products.</u></p> <p>[BS] GYPSUM BOARD. Gypsum wallboard, gypsum sheathing, gypsum base for gypsum veneer plaster, exterior gypsum soffit board, predecorated gypsum board or water-resistant gypsum backing board complying with the standards listed in Tables 2506.2 and 2507.2 and Chapter 35 of the International Building Code. The generic name for a family of sheet products consisting of a noncombustible core primarily of gypsum with paper surfacing.</p>					
G8-19	<p>[BS] POSITIVE ROOF DRAINAGE. The drainage condition in which an evaluation is required for all loading deflections of the roof deck, and additional slope shall be provided to ensure drainage of the roof within 48 hours of precipitation. A design that accounts for deflections from all design loads and has sufficient additional slope to ensure that drainage of the roof occurs within 48 hours of precipitation.</p>		X			Clarification
G9-19	<p>[BF] STEEP SLOPE. A roof slope greater than two units vertical in 12 units horizontal (17-percent slope) or greater.</p>		X			Clarification
G10-19	<p>[BS] TREATED WOOD. Wood products that are conditioned to enhance fire-retardant or preservative properties.</p> <p>FIRE-RETARDANT-TREATED WOOD. <u>Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced surface-burning characteristics and resist propagation of fire.</u></p> <p>PRESERVATIVE-TREATED WOOD. <u>Wood products that, when impregnated with chemicals by a pressure process or other means during manufacture, exhibit reduced susceptibility to damage by fungi, insects or marine borers.</u></p>		X			Clarification
G11-19	<p>Underpinning. <u>The alteration of an existing foundation to transfer loads to a lower elevation using new piers, piles, or other permanent structural support elements installed below the existing foundation.</u></p>		X			Necessary addition for clarification
G12-19 Part I	<p>[BS] WINDBORNE DEBRIS REGION. Areas within hurricane-prone regions located:</p> <ol style="list-style-type: none"> 1. Within 1 mile (1.61 km) of the coastal mean high-water line, where <u>an Exposure D condition exists upwind at the waterline and the basic design wind speed, V, is 130 mph (58 m/s) or greater; or</u> 2. In areas where the basic design wind speed is 140 mph (63.6 m/s) or greater. 		X			Clarification

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		Decrease	None	Increase		
Sub Code:						
	For <i>Risk Category II</i> buildings and structures and <i>Risk Category III</i> buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609.3.(1). For <i>Risk Category IV</i> buildings and structures and <i>Risk Category III</i> health care facilities, the windborne debris region shall be based on Figure 1609.3(2).					
G12-19 Part II	<p>[RB] WINDBORNE DEBRIS REGION. Areas within <i>hurricane-prone regions</i> located in accordance with one of the following:</p> <ol style="list-style-type: none"> 1. Within 1 mile (1.61 km) of the coastal mean high-water line where <u>an Exposure D condition exists upwind at the waterline and the ultimate design wind speed, V_{ult}, is 130 mph (58 m/s) or greater.</u> 2. In areas where the ultimate design wind speed, V_{ult}, is 140 mph (63.6 m/s) or greater; or Hawaii. 		X			Clarification
G13-19	<p>[BS] 403.2.3 Structural integrity of interior exit stairways and elevator hoistway enclosures. For <i>high-rise buildings of Risk Category III</i> or <i>IV</i> in accordance with Section 1604.5, and for all buildings that are more than 420 feet (128 m) in <i>building height</i>, enclosures for <i>interior exit stairways</i> and elevator hoistway enclosures shall comply with Sections 403.2.3.1 through 403.2.3.4.</p> <p>[BS] 403.2.3.1 Wall assembly materials - Soft Body Impact. The wall assemblies <u>panels</u> making up the enclosures for <i>interior exit stairways</i> and elevator hoistway enclosures shall meet or exceed Soft Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.</p> <p>[BS] 403.2.3.2 Wall assembly materials - Hard Body Impact. The face of the wall assemblies <u>panels</u> making up the enclosures for <i>interior exit stairways</i> and elevator hoistway enclosures that are not exposed to the interior of the enclosures for <i>interior exit stairways</i> or elevator hoistway enclosure shall be constructed in accordance with one of the following methods:</p> <p>The wall assembly shall incorporate not no <u>no</u> fewer than two layers of impact-resistant construction board <u>panels</u>, each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M.</p> <p>The wall assembly shall incorporate not no <u>no</u> fewer than one layer of impact-resistant construction material <u>panels</u> that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.</p> <p>The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
	<p>Classification Level 3 as measured by the test method described in ASTM C1629/C1629M.</p> <p>[BS] 403.2.3.3 Concrete and masonry walls. Concrete or masonry walls shall be deemed to satisfy the requirements of Sections 403.2.3.1 and 403.2.3.2.</p> <p>[BS] 403.2.3.4 Other wall assemblies materials. Any other wall assembly materials that provides provide impact resistance equivalent to that required by Sections 403.2.3.1 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.</p>					
G14-19	<p>[BS] 403.2.3.2 Wall assembly materials. The exterior face of the wall assemblies making up the enclosures for interior exit stairways and elevator hoistway enclosures that is not exposed to the interior of the enclosures shall be constructed in accordance with one of the following methods:</p> <ol style="list-style-type: none"> 1. The wall assembly shall incorporate not fewer than two layers of impact-resistant construction board each of which meets or exceeds Hard Body Impact Classification Level 2 as measured by the test method described in ASTM C1629/C1629M. 2. The wall assembly shall incorporate not fewer than one layer of impact-resistant construction material that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M. 3. The wall assembly incorporates multiple layers of any material, tested in tandem, that meets or exceeds Hard Body Impact Classification Level 3 as measured by the test method described in ASTM C1629/C1629M. <p>[BS] 403.2.3.4 Other wall assemblies. Any other wall assembly that provides impact resistance equivalent to that required by Sections 403.2.3.1 for Soft Body Impact Classification Level 3 and 403.2.3.2 for Hard Body Impact Classification Level 3, as measured by the test method described in ASTM C1629/C1629M, shall be permitted.</p>		X			Clarification
G15-19	<p>3307.2 Excavation retention systems. Where a retaining retention system is used to provide support of an excavation for protection of adjacent structures, the system shall conform to the requirements in Section 3307.2.1 through 3307.2.3.</p> <p>3307.2.1 Excavation retention system design. Excavation retention systems shall be designed by a registered design professional to provide vertical and lateral support.</p>		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
	<p>3307.2.2 Excavation retention system monitoring. The retention system design shall include requirements for monitoring of the system and adjacent structures for horizontal and vertical movement. The earth retention system design shall be modified as determined by the monitoring.</p> <p>3307.2.3 Retention system removal. Elements of the system shall only be removed <u>or decommissioned</u> when adequate replacement support is provided by backfill or by the new structure. Removal <u>or decommissioning</u> shall be performed in such a manner that protects the adjacent property.</p>					
G16-19	<p>G101.5 Designation of floodplain administrator. The <u>[INSERT JURISDICTION'S SELECTED POSITION TITLE]</u> is designated as the <u>floodplain administrator and is authorized and directed to enforce the provisions of this appendix. The floodplain administrator is authorized to delegate performance of certain duties to other employees of the jurisdiction. Such designation shall not alter any duties and powers of the building official.</u></p> <p>G103.1 Permit applications. All applications for permits must <u>shall</u> comply with the following:</p> <ol style="list-style-type: none"> 1. The building official <u>floodplain administrator</u> shall review all permit applications to determine whether proposed development is located in flood hazard areas established in Section G102.2. 2. Where a proposed development site is in a flood hazard area, all development to which this appendix is applicable as specified in Section G102.1 shall be designed and constructed with methods, practices and materials that minimize flood damage and that are in accordance with this code and ASCE 24. <p>G103.2 Other permits. It shall be the responsibility of the building official <u>floodplain administrator</u> to ensure that approval of a proposed development shall not be given until proof that necessary permits have been granted by federal or state agencies having jurisdiction over such development.</p> <p>G103.3 Determination of design flood elevations. If design flood elevations are not specified, the building official <u>floodplain administrator</u> is authorized to require the applicant to meet one of the following:</p>		X		Clarifies and amends the Designation of floodplain administrator list	

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p>1. Obtain, review and reasonably utilize data available from a federal, state or other source.</p> <p>2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering techniques. Such analyses shall be performed and sealed by a registered design professional. Studies, analyses and computations shall be submitted in sufficient detail to allow review and approval by the building official <u>floodplain administrator</u>. The accuracy of data submitted for such determination shall be the responsibility of the applicant.</p> <p>G103.4 Activities in riverine flood hazard areas. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the building official <u>floodplain administrator</u> shall not permit any new construction, substantial improvement or other development, including fill, unless the applicant submits an engineering analysis prepared by a registered design professional, demonstrating that the cumulative effect of the proposed development, when combined with all other existing and anticipated flood hazard area encroachment, will not increase the design flood elevation more than 1 foot (305 mm) at any point within the community.</p> <p>G103.5 Floodway encroachment. Prior to issuing a permit for any floodway encroachment, including fill, new construction, substantial improvements and other development or land-disturbing activity, the building official <u>floodplain administrator</u> shall require submission of a certification, prepared by a registered design professional, along with supporting technical data, demonstrating that such development will not cause any increase of the base flood level.</p> <p>G103.6 Watercourse alteration. Prior to issuing a permit for any alteration or relocation of any watercourse, the building official <u>floodplain administrator</u> shall require the applicant to provide notification of the proposal to the appropriate authorities of all adjacent government jurisdictions, as well as appropriate state agencies. A copy of the notification shall be maintained in the permit records and submitted to FEMA.</p>					

	<p>G103.6.1 Engineering analysis. The building official <u>floodplain administrator</u> shall require submission of an engineering analysis, prepared by a registered design professional, demonstrating that the flood-carrying capacity of the altered or relocated portion of the watercourse will not be decreased. Such watercourses shall be maintained in a manner that preserves the channel’s flood-carrying capacity.</p> <p>G103.7 Alterations in coastal areas. Prior to issuing a permit for any alteration of sand dunes and mangrove stands in coastal high-hazard areas and coastal A zones, the building official <u>floodplain administrator</u> shall require submission of an engineering analysis, prepared by a registered design professional, demonstrating that the proposed alteration will not increase the potential for flood damage.</p> <p>G103.8 Records. The building official <u>floodplain administrator</u> shall maintain a permanent record of all permits issued in flood hazard areas, including supporting certifications and documentation required by this appendix and copies of inspection reports, design certifications and documentation of elevations required in Section 1612 of this code and Section R322 of the International Residential Code.</p> <p>G103.9 Inspections. Development for which a permit under this appendix is required shall be subject to inspection. The building official <u>floodplain administrator</u> or the building official’s <u>floodplain administrator’s</u> designee shall make, or cause to be made, inspections of all development in flood hazard areas authorized by issuance of a permit under this appendix.</p> <p>G104.1 Required. Any person, owner or owner’s authorized agent who intends to conduct any development in a flood hazard area shall first make application to the building official <u>floodplain administrator</u> and shall obtain the required <i>permit</i>.</p> <p>G104.2 Application for permit. The applicant shall file an application in writing on a form furnished by the building official <u>floodplain administrator</u>. Such application shall:</p> <ol style="list-style-type: none"> 1. Identify and describe the development to be covered by the permit. 2. Describe the land on which the proposed development is to be conducted by legal description, street address or similar description that will readily identify and definitely locate the site. 3. Include a site plan showing the delineation of flood hazard areas, floodway boundaries, flood zones, design flood elevations, ground elevations, proposed fill and excavation and drainage patterns and facilities. 4. Include in subdivision proposals and other proposed developments with more than 50 lots or larger than 5 acres (20 234 m2), base flood elevation data in accordance with Section 1612.3.1 if such data are not identified for the flood 									
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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>hazard areas established in Section G102.2.</p> <p>5. Indicate the use and occupancy for which the proposed development is intended.</p> <p>6. Be accompanied by construction documents, grading and filling plans and other information deemed appropriate by the building official <u>floodplain administrator</u>.</p> <p>7. State the valuation of the proposed work.</p> <p>8. Be signed by the applicant or the applicant’s authorized agent.</p> <p>G104.3 Validity of permit. The issuance of a permit under this appendix shall not be construed to be a permit for, or approval of, any violation of this appendix or any other ordinance of the jurisdiction. The issuance of a permit based on submitted documents and information shall not prevent the building official <u>floodplain administrator</u> from requiring the correction of errors. The building official <u>floodplain administrator</u> is authorized to prevent occupancy or use of a structure or site that is in violation of this appendix or other ordinances of this jurisdiction.</p> <p>G104.4 Expiration. A permit shall become invalid if the proposed development is not commenced within 180 days after its issuance, or if the work authorized is suspended or abandoned for a period of 180 days after the work commences. Extensions shall be requested in writing and justifiable cause demonstrated. The building official <u>floodplain administrator</u> is authorized to grant, in writing, one or more extensions of time, for periods not more than 180 days each.</p> <p>G104.5 Suspension or revocation. The building official <u>floodplain administrator</u> is authorized to suspend or revoke a permit issued under this appendix wherever the permit is issued in error or on the basis of incorrect, inaccurate or incomplete information, or in violation of any ordinance or code of this jurisdiction.</p> <p>G105.2 Records. The building official <u>floodplain administrator</u> shall maintain a permanent record of all variance actions, including justification for their issuance.</p> <p>G105.7 Conditions for issuance. Variances shall only be issued by the board of appeals where all of the following criteria are met:</p> <ol style="list-style-type: none"> 1. A technical showing of good and sufficient cause that the unique characteristics of the size, configuration or topography of the site renders the elevation standards inappropriate. 2. A determination that failure to grant the variance would result in 					

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	<p>exceptional hardship by rendering the lot undevelopable.</p> <p>3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, nor create nuisances, cause fraud on or victimization of the public or conflict with existing local laws or ordinances.</p> <p>4. A determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.</p> <p>5. Notification to the applicant in writing over the signature of the building official <u>floodplain administrator</u> that the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage, and that such construction below the base flood level increases risks to life and property.</p>					
G17-19	<p>G103.10 Use of changed technical data. The building official <u>floodplain administrator</u> and the applicant shall not use changed flood hazard area boundaries or base flood elevations for proposed buildings or developments unless the building official <u>floodplain administrator</u> or applicant has applied for a conditional Flood Insurance Rate Map (FIRM) revision and has received the approval of the Federal Emergency Management Agency (FEMA).</p>		X			Clarification
G18-19	<p>G105.1 General. The jurisdiction shall establish or designate a board to <u>board of appeals established pursuant to Section 113, or other established or designated board, shall</u> hear and decide requests for variances. The board shall base its determination on technical justifications, and has the right to attach such conditions to variances as it deems necessary to further the purposes and objectives of this appendix and Section 1612.</p>		X			Clarification
G19-19	<p>G105.4 Functionally dependent facilities uses. A variance is authorized to be issued for the construction or substantial improvement of a structure and for other development necessary for the conduct of a <u>functionally dependent facility use</u> provided that the criteria in Section 1612.1 are met and the variance is the minimum necessary to allow the construction or substantial improvement, and that all due consideration has been given to methods and materials that minimize flood damages during the design flood and do not create additional threats to public safety.</p> <p>G201.2 Definitions. DEVELOPMENT. Any man-made change to improved or unimproved real estate, including but not limited to, buildings or other structures, temporary structures, temporary or permanent storage of materials,</p>		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase				
Sub Code:								
	<p>mining, dredging, filling, grading, paving, excavations, operations and other land-disturbing activities.</p> <p>FUNCTIONALLY DEPENDENT FACILITY USE. A <u>facility use</u> that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities necessary for the loading or unloading of cargo or passengers, and shipbuilding and ship repair facilities. The term does not include long-term storage, manufacture, sales or service facilities.</p>							
G20-19	<p>G201.2 Definitions.</p> <p>MANUFACTURED HOME. A structure that is transportable in one or more sections, built on a permanent chassis, designed for use with or without a permanent foundation when attached to the required utilities, and constructed to the Federal Mobile <u>Manufactured</u> Home Construction and Safety Standards and rules and regulations promulgated by the U.S. Department of Housing and Urban Development. The term also includes mobile homes, park trailers, travel trailers and similar transportable structures that are placed on a site for 180 consecutive days or longer.</p> <p style="text-align: center;">SECTION G1101 REFERENCED STANDARDS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">HUD 24 CFR Part 3280 (2008 2018)</td> <td style="width: 33%;">Manufactured Home Construction and Safety Standards</td> <td style="width: 33%;">G201</td> </tr> </table>	HUD 24 CFR Part 3280 (2008 2018)	Manufactured Home Construction and Safety Standards	G201		X		Clarification
HUD 24 CFR Part 3280 (2008 2018)	Manufactured Home Construction and Safety Standards	G201						
S5-19	<p>1511.3 Roof replacement. <i>Roof replacement</i> shall include the removal of all existing layers of roof coverings and roof assembly materials down to the roof deck.</p> <p>Exception: Where the existing roof assembly includes an ice barrier membrane that is adhered to the roof deck, the existing ice barrier membrane shall be permitted to remain in place and covered with an additional layer of ice barrier membrane in accordance with Section 1507.</p>		X			Clarification		
S10-19	<p>1511.5 Reinstallation of materials. Existing slate, clay or cement tile shall be permitted for reinstallation, except that damaged, cracked or broken slate or tile shall not be reinstalled. Existing vent flashing, metal edgings, drain outlets, collars and metal counterflashings shall not be reinstalled where rusted, damaged or deteriorated. <u>Aggregate Existing ballast that is damaged, cracked or broken shall not be reinstalled. Existing aggregate surfacing materials from built-up roofs shall not be reinstalled.</u></p>	X			Cost savings by Reusing aggregate ballast	Clarification		

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
S12-19	1503.3.1 Fire-resistance-rated parapet walls. Parapet walls required by section 705.11 shall be coped or covered with non-combustible , weatherproof materials of a width not less than the thickness of the parapet wall <u>such that the fire resistance rating of the wall is not decreased.</u>		X			Clarification
S13-19	1503.3.1 Fire-resistance-rated parapet walls. Parapet walls required by section 705.11 shall be coped or covered with non-combustible , weatherproof materials of a width not less than the thickness of the parapet wall <u>such that the fire resistance rating of the wall is not decreased.</u>	X			Cost reduction of \$5-10/ LF if no metal coping	Clarification
S14-19	1504.2 Wind resistance of clay and concrete tile. Wind loads on clay and concrete tile roof coverings shall be in accordance with Section 1609.5. 1504.2.1 Testing. Testing of concrete and clay roof tiles shall be in accordance with Sections 1504.2.1.1, <u>1504.2.1.2</u> and 1504.2.1.2 - <u>1504.2.1.3.</u> 1504.2.1.1 Overturning resistance. Concrete and clay roof tiles shall be tested to determine their resistance to overturning due to wind in accordance with Chapter 15 and either SBCCI SSTD 11 or ASTM C1568. 1504.2.1.2 Wind tunnel testing. Where concrete and clay roof tiles do not satisfy the limitations in Chapter 16 for rigid tile, a wind tunnel test shall be used to determine the wind characteristics of the concrete or clay tile roof covering in accordance with <u>Chapter 15 and either SBCCI SSTD 11 and Chapter 15 or ASTM C1569.</u> 1504.2.1.3 Air permeability testing. <u>The lift coefficient for concrete and clay tile shall be 0.2 or shall be determined in accordance with SBCCI SSTD 11 or ASTM C1570.</u>		X			Clarification
S15-19	1504.4 Ballasted low-slope single-ply roof systems. Ballasted low-slope (roof slope < 2:12) single-ply roof system coverings installed in accordance with Sections 1507.12 and 1507.13 shall be designed in accordance with Section 1504.8 and ANSI/SPRI RP-4.		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>1504.8 Surfacing and ballast materials in hurricane-prone regions. For a building located in a hurricane-prone region as defined in Section 202, or on any other building with a mean roof height exceeding that permitted by Table 1504.8 based on the exposure category and basic wind speed at the site, the following materials shall not be used on the roof:</p> <ol style="list-style-type: none"> 1. Aggregate used as surfacing for roof coverings. 2. Aggregate, gravel or stone used as ballast. <p>Exception: Ballasted single-ply roof systems complying with Section <u>1504.4</u></p>					
S16-19	<p>1504.5 Edge systems for low-slope roofs. Metal edge systems, except gutters and counterflashing, installed on built-up, modified bitumen and single-ply roof systems having a slope less than 2:12, shall be designed and installed for wind loads in accordance with Chapter 16 and tested for resistance in accordance with Test Methods RE-1, RE-2 and RE-3 of ANSI/SPRI ES-1, except basic design wind speed, V, shall be determined from Figures 1609.3(1) through 1609.3(8) as applicable.</p>		X			Clarification
S17-19	<p>1504.5.1 Gutter securement for low-slope roofs. External gutters Gutters that are used to secure the <u>perimeter edge</u> of the roof membrane on low-slope (less than 2:12 slope) built-up, modified bitumen, and single ply roofs, shall be designed, constructed and installed to resist wind loads in accordance with Section 1609 and shall be tested in accordance with Test Methods G-1 and G-2 of SPRI GT-1.</p>			X	\$0.06/LF	Clarification
S18-19	<p>1504.7 Impact resistance. Roof coverings installed on low-slope roofs (roof slope < 2:12) in accordance with Section 1507 shall resist impact damage based on the results of tests conducted in accordance with ASTM D3746, ASTM D4272 or the "Resistance to Foot Traffic Test" in Section 5.5 of FM 4470.</p>		X			Clarification
S21-19	<p>1504.8 Wind resistance of aggregate-surfaced roofs. <u>Parapets shall be provided for aggregate surfaced roofs and</u> shall comply with Table 1504.8.</p> <p>TABLE 1504.8 MINIMUM REQUIRED PARAPET HEIGHT (INCHES) FOR AGGREGATE SURFACED ROOFS</p>			X	Minimal depending on design conditions	Clarification
S22-19	<p>1506.1 Scope. The requirements set forth in this section shall apply to the application of roof-covering materials specified herein. Roof coverings shall be applied in accordance with this chapter and the roof covering listing <u>as required by Section 1505</u>. Installation of roof coverings shall comply with the applicable provisions of Section 1507.</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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S24-19	<p>1507.1.1 Underlayment. Underlayment for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. Underlayment materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance with the standard designation and, if applicable, type classification indicated in Table 1507.1.1(1). Underlayment shall be applied in accordance with Table 1507.1.1(2). Underlayment shall be attached in accordance with Table 1507.1.1(3).</p> <p>Exceptions:</p> <p>1. As an alternative, self-adhering polymer modified bitumen underlayment complying with ASTM D1970 and installed in accordance with the manufacturer’s installation instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed shall be permitted.</p> <p>2.<u>1.</u> As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer modified bitumen membrane complying with ASTM D1970 and installed in accordance with the manufacturer’s installation instructions for the deck material shall be applied over all joints in the roof decking. An approved underlayment for the applicable roof covering for design wind speeds less than 120 mph (54 m/s) shall be applied over the 4-inch-wide (102 mm) membrane strips.</p> <p>3.<u>2.</u> As an alternative, two layers of underlayment complying with ASTM D226 Type II or ASTM D4869 Type IV shall be permitted to be installed as follows: Apply a 19-inch (483 mm) strip of underlayment parallel with the eave. Starting at the eave, apply 36-inch-wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25.4 mm). Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a thickness of not less than 0.010 inch (mm). Thickness of the outside edge of plastic caps shall be not less than 0.035 inch (mm). The cap nail shank shall be not less than 0.083 inch for</p>		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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	ring shank cap nails and 0.091 inch (mm) for smooth shank cap nails. The cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch (19.1 mm) into the roof sheathing. 4.3. Structural metal panels that do not require a substrate or underlayment.																	
S25-19	1507.3.1 Deck requirements. Concrete and clay tile shall be installed only over solid structural sheathing boards. Exception: <u>Spaced lumber sheathing shall be permitted in Seismic Design Categories A, B and C.</u>		X			Clarification												
S28-19	1507.3.6 Fasteners. Tile fasteners shall be corrosion resistant and not less than 11-gage, [0.120 inch (3 mm)], 5/16-inch (8.0 mm) head, and of sufficient length to penetrate the deck not less than 3/4 inch (19.1 mm) or through the thickness of the deck, whichever is less. Attaching wire for clay or concrete tile shall not be smaller than 0.083 inch (2.1 mm). Perimeter fastening areas include three tile courses but not less than 36 inches (914 mm) from either side of hips or ridges and edges of eaves and gable rakes.		X			Clarification												
S31-19	TABLE 1507.12.2 SINGLE-PLY ROOFING MATERIAL STANDARDS		X			Clarification												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MATERIAL</th> <th style="width: 50%;">MATERIAL STANDARD</th> </tr> </thead> <tbody> <tr> <td>Chlorosulfonated polyethylene (CSPE) or polyisobutylene (PIB)</td> <td>ASTM D5019</td> </tr> <tr> <td>Ethylene propylene diene monomer (EPDM)</td> <td>ASTM D4637</td> </tr> <tr> <td>Ketone Ethylene Ester (KEE)</td> <td>ASTM D6754</td> </tr> <tr> <td>Polyvinyl Chloride (PVC) or (PVC/KEE)</td> <td>ASTM D4434</td> </tr> <tr> <td>Thermoplastic polyolefin (TPO)</td> <td>ASTM D6878</td> </tr> </tbody> </table>	MATERIAL	MATERIAL STANDARD	Chlorosulfonated polyethylene (CSPE) or polyisobutylene (PIB)	ASTM D5019	Ethylene propylene diene monomer (EPDM)	ASTM D4637	Ketone Ethylene Ester (KEE)	ASTM D6754	Polyvinyl Chloride (PVC) or (PVC/KEE)	ASTM D4434	Thermoplastic polyolefin (TPO)	ASTM D6878					
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S32-19	1507.15 Liquid-applied roofing. The installation of liquid-applied roofing shall comply with the provisions of this section. 1507.15.1 Slope. Liquid-applied roofing shall have a design slope of not less than one-fourth unit vertical in 12 units horizontal (2-percent slope). 1507.15.2 Material standards. Liquid-applied roofing shall comply with ASTM C836, ASTM C957, ASTM D1227 or ASTM D3468 , ASTM D6083 , ASTM D6694 or ASTM D6947 D3468 .		X			Clarification												
S33-19 Part I	TABLE 1504.1.1 CLASSIFICATION OF STEEP SLOPE ROOF SHINGLES TESTED IN ACCORDANCE WITH ASTM D3161 OR D7158		X			Clarification												

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S33-19 Part II	<p style="text-align: center;">TABLE R905.16.6 Classification of Photovoltaic Shingles</p> <table border="1"> <thead> <tr> <th>MAXIMUM ULTIMATE DESIGN WIND SPEED, V_{ult} FROM FIGURE R301.2(5)A (mph)</th> <th>MAXIMUM BASIC WIND SPEED, V_{asd} FROM TABLE R301.2.1.3(mph)</th> <th>UL 7103^a SHINGLE CLASSIFICATION</th> <th>UL 7103 SHINGLE CLASSIFICATION</th> </tr> </thead> <tbody> <tr><td>110</td><td>85</td><td>D, G or H</td><td>A, D or F</td></tr> <tr><td>116</td><td>90</td><td>D, G or H</td><td>A, D or F</td></tr> <tr><td>129</td><td>100</td><td>G or H</td><td>A, D or F</td></tr> <tr><td>142</td><td>110</td><td>G or H</td><td>F</td></tr> <tr><td>155</td><td>120</td><td>G or H</td><td>F</td></tr> <tr><td>168</td><td>130</td><td>H</td><td>F</td></tr> <tr><td>181</td><td>140</td><td>H</td><td>F</td></tr> <tr><td>194</td><td>150</td><td>H</td><td>F</td></tr> </tbody> </table> <p>a. The standard calculations contained in UL7102 assume Exposure Category B or C and a building height of 60 feet or less. Additional calculations are required for conditions outside of these assumptions.</p>				MAXIMUM ULTIMATE DESIGN WIND SPEED, V _{ult} FROM FIGURE R301.2(5)A (mph)	MAXIMUM BASIC WIND SPEED, V _{asd} FROM TABLE R301.2.1.3(mph)	UL 7103 ^a SHINGLE CLASSIFICATION	UL 7103 SHINGLE CLASSIFICATION	110	85	D, G or H	A, D or F	116	90	D, G or H	A, D or F	129	100	G or H	A, D or F	142	110	G or H	F	155	120	G or H	F	168	130	H	F	181	140	H	F	194	150	H	F		X			Clarification
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S34-19 Part I	<p>[BG] 1510.7.2 Photovoltaic panels and modules. Rooftop-mounted photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703, or with both UL 61730-1 and UL 61730-2, and shall be installed in accordance with the manufacturer's instructions.</p> <p>1507.17.6 Material standards. Photovoltaic shingles shall be listed and labeled in accordance with UL 1703 or with both UL 61730-1 and UL 61730-2.</p>					X			Provides an alternate compliance option																																				

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																
		Decrease	None	Increase																		
Sub Code:																						
	<p>1507.18.5 Material standards. BIPV roof panels shall be listed and labeled in accordance with UL 1703 <u>or with both UL 61730-1 and UL 61730-2.</u></p> <p>3111.3.1 Equipment. Photovoltaic panels and modules shall be <i>listed</i> and <i>labeled</i> in accordance with UL 1703 <u>or with both UL 61730-1 and UL 61730-2.</u> Inverters shall be <i>listed</i> and <i>labeled</i> in accordance with UL 1741. Systems connected to the utility grid shall use inverters <i>listed</i> for utility interaction.</p>																					
S34-19 Part II	<p>R324.3.1 Equipment listings. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703 <u>or with both UL 61730-1 and UL 61730-2.</u> Inverters shall be <i>listed</i> and <i>labeled</i> in accordance with UL 1741. Systems connected to the utility grid shall use inverters <i>listed</i> for utility interaction.</p> <p>R905.16.4 Material standards. <i>Photovoltaic shingles</i> shall be listed and labeled in accordance with UL 1703 <u>or with both UL 61730-1 and UL 61730-2.</u></p> <p>R905.17.5 Material standards. <i>BIPV roof panels</i> shall be <i>listed</i> and <i>labeled</i> in accordance with UL 1703 <u>or with both UL 61730-1 and UL 61730-2.</u></p>		X			Clarification																
S35-19	<p style="text-align: center;">TABLE 1509.2 ROOF COATING MATERIAL STANDARDS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MATERIAL</th> <th style="width: 50%;">STANDARD</th> </tr> </thead> <tbody> <tr> <td>Acrylic coating</td> <td>ASTM D6083</td> </tr> <tr> <td><u>Asphaltic emulsion coating</u></td> <td>ASTM D1227</td> </tr> <tr> <td><u>Asphalt coating</u></td> <td>ASTM D2823</td> </tr> <tr> <td><u>Asphalt roof coating</u></td> <td>ASTM D4479</td> </tr> <tr> <td><u>Aluminum-pigmented asphalt coating</u></td> <td>ASTM D2824</td> </tr> <tr> <td><u>Silicone coating</u></td> <td>ASTM D6694</td> </tr> <tr> <td><u>Moisture-cured polyurethane coating</u></td> <td>ASTM D6947</td> </tr> </tbody> </table>	MATERIAL	STANDARD	Acrylic coating	ASTM D6083	<u>Asphaltic emulsion coating</u>	ASTM D1227	<u>Asphalt coating</u>	ASTM D2823	<u>Asphalt roof coating</u>	ASTM D4479	<u>Aluminum-pigmented asphalt coating</u>	ASTM D2824	<u>Silicone coating</u>	ASTM D6694	<u>Moisture-cured polyurethane coating</u>	ASTM D6947		X			Provides an alternate compliance option
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S36-19	<p>[BS] LIVE LOAD, ROOF. A load on a roof produced:</p> <ol style="list-style-type: none"> 1. During maintenance by workers, equipment and materials; <u>or</u> 2. During the life of the structure by movable objects such as planters or other similar small decorative appurtenances that are not occupancy related; or 3. By the use and occupancy of the roof such as for roof gardens or assembly areas. 		X			Clarification																

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p style="text-align: center;">SECTION 1602 NOTATIONS</p> <p>1602.1 Notations. The following notations are used in this chapter:</p> <p><i>D</i> = Dead load. <i>D_i</i> = Weight of ice in accordance with Chapter 10 of ASCE 7. <i>E</i> = Combined effect of horizontal and vertical earthquake induced forces as defined in Section 2.3.6 of ASCE 7. <i>F</i> = Load due to fluids with well-defined pressures and maximum heights. <i>F_a</i> = Flood load in accordance with Chapter 5 of ASCE 7. <i>H</i> = Load due to lateral earth pressures, ground water pressure or pressure of bulk materials. <i>L</i> = Roof live load greater than 20 psf (0.96 kN/m²) and floor live <u>Live</u> load. <i>L_r</i> = Roof live load of 20 psf (0.96 kN/m²) or less. <i>R</i> = Rain load. <i>S</i> = Snow load. <i>T</i> = Cumulative effects of self-straining load forces and effects. <i>V_{asd}</i> = Allowable stress design wind speed, miles per hour (mph) (km/hr) where applicable. <i>V</i> = Basic design wind speeds, miles per hour (mph) (km/hr) determined from Figures 1609.3(1) through 1609.3(8) or ASCE 7. <i>W</i> = Load due to wind pressure. <i>W_i</i> = Wind-on-ice in accordance with Chapter 10 of ASCE 7.</p>					
S39-19	<p>1603.1.4 Wind design data. The following information related to wind loads shall be shown, regardless of whether wind loads govern the design of the lateral force-resisting system of the structure:</p> <ol style="list-style-type: none"> 1. Basic design wind speed, <i>V</i>, miles per hour and allowable stress design wind speed, <i>V_{asd}</i>, as determined in accordance with Section 1609.3.1. 2. <i>Risk category</i>. 3. Wind exposure. Applicable wind direction if more than one wind exposure is utilized. 4. Applicable internal pressure coefficient. 5. Design wind pressures <u>and their applicable zones with dimensions</u> to be used for exterior component and cladding materials not specifically designed by the <i>registered design professional</i> responsible for the design of the structure, psf (kN/m²). 6. Roof pressure coefficient (<i>G_c</i>), zones, locations and dimensions. 		X		Clarification	

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE				
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Sub Code:										
S40-19	<p style="text-align: center;">SECTION 1604 GENERAL DESIGN REQUIREMENTS</p> <p>1604.3 Serviceability. Structural systems and members thereof shall be designed to have adequate stiffness to limit deflections as indicated in Table 1604.3. Drift limits applicable to earthquake loading shall be in accordance with ASCE 7 Chapter 12, 13, 15 or 16, as applicable.</p>		X			Clarification				
S44-19	<p style="text-align: center;">TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 15%;">RISK CATEGORY</th> <th>NATURE OF OCCUPANCY</th> </tr> </thead> <tbody> <tr> <td>III</td> <td> <p>Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to:</p> <ul style="list-style-type: none"> •Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. •Buildings and other structures containing one or more public assembly spaces, each having an occupant load greater than 300 and a cumulative occupant load of the these public assembly spaces of greater than 2,500. •Buildings and other structures containing Group E occupancies with an occupant load greater than 250. •Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. •Group I-2, Condition 1 occupancies with 50 or more care recipients. •Group I-2, Condition 2 occupancies not having emergency surgery or emergency treatment facilities. •Group I-3 occupancies. •Any other occupancy with an occupant load greater than 5,000.^a •Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. •Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the International Fire Code; and Are sufficient to pose a threat to the public if released.^b <p>a. For purposes of occupant load calculation, occupancies required by Table 1004.5 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.</p> <p>b. Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided that it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.</p> </td> </tr> </tbody> </table>	RISK CATEGORY	NATURE OF OCCUPANCY	III	<p>Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to:</p> <ul style="list-style-type: none"> •Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. •Buildings and other structures containing one or more public assembly spaces, each having an occupant load greater than 300 and a cumulative occupant load of the these public assembly spaces of greater than 2,500. •Buildings and other structures containing Group E occupancies with an occupant load greater than 250. •Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. •Group I-2, Condition 1 occupancies with 50 or more care recipients. •Group I-2, Condition 2 occupancies not having emergency surgery or emergency treatment facilities. •Group I-3 occupancies. •Any other occupancy with an occupant load greater than 5,000.^a •Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. •Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the International Fire Code; and Are sufficient to pose a threat to the public if released.^b <p>a. For purposes of occupant load calculation, occupancies required by Table 1004.5 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.</p> <p>b. Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided that it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.</p>			X	More buildings fall in Risk Category III	Clarification
RISK CATEGORY	NATURE OF OCCUPANCY									
III	<p>Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to:</p> <ul style="list-style-type: none"> •Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. •Buildings and other structures containing one or more public assembly spaces, each having an occupant load greater than 300 and a cumulative occupant load of the these public assembly spaces of greater than 2,500. •Buildings and other structures containing Group E occupancies with an occupant load greater than 250. •Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. •Group I-2, Condition 1 occupancies with 50 or more care recipients. •Group I-2, Condition 2 occupancies not having emergency surgery or emergency treatment facilities. •Group I-3 occupancies. •Any other occupancy with an occupant load greater than 5,000.^a •Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. •Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the International Fire Code; and Are sufficient to pose a threat to the public if released.^b <p>a. For purposes of occupant load calculation, occupancies required by Table 1004.5 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.</p> <p>b. Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided that it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.</p>									
S45-19	<p style="text-align: center;">TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 15%;">RISK CATEGORY</th> <th>NATURE OF OCCUPANCY</th> </tr> </thead> <tbody> <tr> <td>III</td> <td>Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to:</td> </tr> </tbody> </table>	RISK CATEGORY	NATURE OF OCCUPANCY	III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to:			X	More buildings fall in Risk Category III	Clarification
RISK CATEGORY	NATURE OF OCCUPANCY									
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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<ul style="list-style-type: none"> •Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. •Buildings and other structures containing Group E or Group I-4 occupancies or combination thereof, with an occupant load greater than 250. •Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. •Group I-2, Condition 1 occupancies with 50 or more care recipients. •Group I-2, Condition 2 occupancies not having emergency surgery or emergency treatment facilities. •Group I-3 occupancies. •Any other occupancy with an occupant load greater than 5,000.^a •Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. •Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the International Fire Code ; and Are sufficient to pose a threat to the public if released.^b <p>a. For purposes of occupant load calculation, occupancies required by Table 1004.5 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.</p> <p>b. Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided that it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.</p>					
S47-19	<p style="text-align: center;">SECTION 1605 LOAD COMBINATIONS</p> <p>1605.1 General. Buildings and other structures and portions thereof shall be designed to resist the Strength Load Combinations specified in ASCE 7 Section 2.3, the Allowable Stress Design Load Combinations specified in ASCE 7 Section 2.4, or the Alternative Allowable Stress Design Load Combinations of Section 1605.2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. The modifications to Load Combinations of ASCE 7 Section 2.3, ASCE 7 Section 2.4, and Section 1605.2 specified in ASCE 7 Chapter 18 and 19 shall apply. 2. When the Allowable Stress Design Load Combinations of ASCE 7 Section 2.4 are used, flat roof snow loads of 30 psf 		X			Clarification

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Sub Code:						
	<p>(1.44kN/m²) and roof live loads of 30 psf (1.44 kN/m²) or less need not be combined with seismic load. Where flat roof snow loads exceed 30 psf (1.44kN/m²), 20 percent shall be combined with seismic loads.</p> <p>3. <u>Where the Allowable Stress Design Load Combinations of ASCE 7 Section 2.4 are used, crane hook loads need not be combined with roof live loads or with more than three-fourths of the snow load or one-half of the wind loads.</u></p> <p>1605.2 Load combinations using strength design or load and resistance factor design.</p> <p>1605.2.1 Other loads.</p> <p>1605.3 Load combinations using allowable stress design.</p> <p>1605.3.1 Basic load combinations.</p> <p>1605.3.1.1 Stress increases.</p> <p>1605.3.1.2 Other loads.</p> <p>1605.2 Alternative allowable stress design load combinations. In lieu of the Load Combinations in ASCE 7 Section 2.4, structures and portions thereof shall be permitted to be designed for the most critical effects resulting from the following combinations. Where using these alternative allowable stress load combinations that include wind or seismic loads, allowable stresses are permitted to be increased or load combinations reduced where permitted by the material chapter of this code or the referenced standards. For load combinations that include the counteracting effects of dead and wind loads, only two-thirds of the minimum dead load likely to be in place during a design wind event shall be used. Where using allowable stresses that have been increased or load combinations that have been reduced as permitted by the material chapter of this code or the referenced standards, where wind loads are calculated in accordance with Chapters 26 through 31 of ASCE 7, the coefficient (ω) in the following equations shall be taken as 1.3. For other wind loads, (ω) shall be taken as 1. Where allowable stresses have not been increased or load combinations have not been reduced as permitted by the material chapter of this code or the referenced standards, (ω) shall be taken as 1. Where using these alternative load combinations to evaluate sliding, overturning and soil bearing at the soil-structure interface, the reduction of foundation overturning</p>					

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Sub Code:						
	<p>from Section 12.13.4 in ASCE 7 shall not be used. Where using these alternative basic load combinations for proportioning foundations for loadings, which include seismic loads, the vertical seismic <i>load effect</i>, E_v, in Equation 12.4-4 of ASCE 7 is permitted to be taken equal to zero. <u>Where required by ASCE 7 Chapters 12, 13, and 15, the Load Combinations including overstrength of ASCE 7 Sections 2.3.6 shall be used.</u></p> <p>(Equation 16-1)</p> <p>(Equation 16-2)</p> <p>(Equation 16-3)</p> <p>(Equation 16-4)</p> <p>(Equation 16-5)</p> <p>(Equation 16-6)</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Crane hook loads need not be combined with roof live loads or with more than three-fourths of the snow load or one-half of the wind load. 2. Flat roof snow loads of 30 psf (1.44 kN/m²) or less and roof live loads of 30 psf (1.44 kN/m²) or less need not be combined with seismic loads. Where flat roof snow loads exceed 30 psf (1.44 kN/m²), 20 percent shall be combined with seismic loads. 3. Where required by ASCE 7 Chapter 12, 13, and 15, the Load Combinations including overstrength of ASCE 7 Section 2.3.6 shall be used. <p>1605.3.2.1 Other loads.</p> <p>1607.14 Crane loads. The crane live load shall be the rated capacity of the crane. Design loads for the runway beams, including connections and support brackets, of moving bridge cranes and monorail cranes shall include the maximum wheel loads of the crane and the vertical impact, lateral and longitudinal forces induced by the moving crane. Crane hook loads need not be combined with roof live load or with more than three-fourths of the snow loads or one-half of the wind load.</p>					

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Sub Code:						
S48-19	<p>1605.3.2 Alternative basic load combinations. In lieu of the basic load combinations specified in Section 1605.3.1, structures and portions thereof shall be permitted to be designed for the most critical effects resulting from the following combinations. Where using these alternative basic allowable stress load combinations that include wind or seismic loads, allowable stresses are permitted to be increased or load combinations reduced where permitted by the material chapter of this code or the referenced standards. For load combinations that include the counteracting effects of dead and wind loads, only two-thirds of the minimum dead load likely to be in place during a design wind event shall be used. Where using allowable stresses that have been increased or load combinations that have been reduced as permitted by the material chapter of this code or the referenced standards, where wind loads are calculated in accordance with Chapters 26 through 31 of ASCE 7, the coefficient (w) in the following equations shall be taken as 1.3. For other wind loads, (w) shall be taken as 1. Where allowable stresses have not been increased or load combinations have not been reduced as permitted by the material chapter of this code or the referenced standards, (w) shall be taken as 1. Where using these alternative load combinations to evaluate sliding, overturning and soil bearing at the soil-structure interface, the reduction of foundation overturning from Section 12.13.4 in ASCE 7 shall not be used. Where using these alternative basic load combinations for proportioning foundations for loadings, which include seismic loads, the vertical seismic <i>load effect</i>, E_v, in Equation 12.4-4 of ASCE 7 is permitted to be taken equal to zero.</p> <p>$D + L + (L_r \text{ or } S \text{ or } R)$ (Equation 16-17)</p> <p>$D + L + 0.6 \omega W$ $D + L + 0.6W$ (Equation 16-18)</p> <p>$D + L + 0.6 \omega W + S/2$ $D + L + 0.6W + S/2$ (Equation 16-19)</p> <p>$D + L + S + 0.6 \omega W/2$ $D + L + S + 0.6W/2$ (Equation 16-20)</p> <p>$D + L + S + E/1.4$ (Equation 16-21)</p> <p>$0.9D + E/1.4$ (Equation 16-22)</p> <p>Exceptions:</p> <p>1. Crane hook loads need not be combined with roof live loads or with more than three-fourths of the snow load or one-half of the wind load.</p>		X			Clarification

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		Decrease	None	Increase							
Sub Code:											
	2. Flat roof snow loads of 30 psf (1.44 kN/m ²) or less and roof live loads of 30 psf (1.44 kN/m ²) or less need not be combined with seismic loads. Where flat roof snow loads exceed 30 psf (1.44 kN/m ²), 20 percent shall be combined with seismic loads.										
S49-19	<p>1606.2 Design dead load. Weights of materials of construction. For purposes of design, the actual weights of materials of construction and fixed service equipment shall be used. In the absence of definite information, values used shall be subject to the approval of the building official.</p> <p>1606.3 Weight of fixed service equipment. In determining dead loads for purposes of design, the weight of fixed service equipment, including the maximum weight of the contents of fixed service equipment, shall be included. The components of fixed service equipment that are variable, such as liquid contents and movable trays, shall not be used to counteract forces causing overturning, sliding, and uplift conditions in accordance with Section 1.3.6 of ASCE 7.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> Where force effects are the result of the presence of the variable components, the components are permitted to be used to counter those load effects. In such cases, the structure shall be designed for force effects with the variable components present and with them absent. For the calculation of seismic force effects, the components of fixed service equipment that are variable, such as liquid contents and movable trays, need not exceed those expected during normal operation. 		X			Clarifies how to handle equipment & coordinates for ASCE 7					
S50-19	1606.3 Photovoltaic panel systems. The weight of photovoltaic panel systems, their support system, and ballast shall be considered as dead load.		X			Clarification					
S51-19	1606.3 Vegetative and landscaped roofs. The weight of all landscaping and hardscaping materials for vegetative and landscaped roofs shall be considered as dead load. The weight shall be computed considering both fully saturated soil and drainage layer materials and fully dry soil and drainage layer materials to determine the most severe load effects on the structure.		X			Clarification					
S53-19	<p style="text-align: center;">TABLE 1607.1</p> <p style="text-align: center;">MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L₀, AND</p> <p style="text-align: center;">MINIMUM CONCENTRATED LIVE LOADS⁶</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">OCCUPANCY OR USE</th> <th style="width: 20%;">UNIFORM (psf)</th> <th style="width: 20%;">CONCENTRATED (pounds)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)					X		Clarification
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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																						
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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)										
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Sub Code:						
S57-19	<p>TABLE 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L₀, AND MINIMUM CONCENTRATED LIVE LOADS</p> <p>a. Floors in garages or portions of buildings used for the storage of motor vehicles shall be designed for the uniformly distributed live loads of this table or the following concentrated loads: (1) for garages restricted to passenger vehicles accommodating not more than nine passengers, 3,000 pounds acting on an area of 4¹/₂ inches by 4¹/₂ inches; (2) for mechanical parking structures without slab or deck that are used for storing passenger vehicles only, 2,250 pounds per wheel.</p> <p>b. The loading applies to stack room floors that support nonmobile, double-faced library book stacks, subject to the following limitations:</p> <ol style="list-style-type: none"> 1. The nominal book stack unit height shall not exceed 90 inches. 2. The nominal shelf depth shall not exceed 12 inches for each face. 3. Parallel rows of double-faced book stacks shall be separated by aisles not less than 36 inches wide. <p>c. Design in accordance with ICC 300.</p> <p>d. Other uniform loads in accordance with an approved method containing provisions for truck loadings shall be considered where appropriate.</p> <p>e. The concentrated wheel load shall be applied on an area of 4.5 inches by 4.5 inches.</p> <p>f. The minimum concentrated load on stair treads shall be applied on an area of 2 inches by 2 inches. This load need not be assumed to act concurrently with the uniform load.</p> <p>g. Where snow loads occur that are in excess of the design conditions, the structure shall be designed to support the loads due to the increased loads caused by drift buildup or a greater snow design determined by the building official (see Section 1608).</p> <p>h. See Section 1604.8.3 for decks attached to exterior walls.</p> <p>i. Uninhabitable attics without storage are those where the maximum clear height between the joists and rafters is less than 42 inches, or where there are not two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches in height by 24 inches in width, or greater, within the plane of the trusses. This live load need not be assumed to act concurrently with any other live load requirements.</p> <p>j. Uninhabitable attics with storage are those where the maximum</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>clear height between the joists and rafters is 42 inches or greater, or where there are two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches in height by 24 inches in width, or greater, within the plane of the trusses.</p> <p>The live load need only be applied to those portions of the joists or truss bottom chords where both of the following conditions are met:</p> <ul style="list-style-type: none"> i. The attic area is accessible from an opening not less than 20 inches in width by 30 inches in length that is located where the clear height in the attic is not less than 30 inches. ii. The slopes of the joists or truss bottom chords are not greater than two units vertical in 12 units horizontal. <p>The remaining portions of the joists or truss bottom chords shall be designed for a uniformly distributed concurrent live load of not less than 10 pounds per square foot.</p> <p>k. Attic spaces served by stairways other than the pull-down type shall be designed to support the minimum live load specified for habitable attics and sleeping rooms.</p> <p>l. Areas of occupiable roofs, other than roof gardens and assembly areas, shall be designed for appropriate loads as approved by the building official. Unoccupied landscaped areas of roofs shall be designed in accordance with Section 1607.13.3.</p> <p>m. Live load reduction is not permitted.</p> <p>n. Live load reduction is only permitted in accordance with Section 1607.11.1.2 or Item 1 of Section 1607.11.2.</p> <p>o. Live load reduction is only permitted in accordance with Section 1607.11.1.3 or Item 2 of Section 1607.11.2.</p> <p><u>1607.7 Passenger vehicle garages.</u> Floors in garages or portions of a building used for the storage of motor vehicles shall be designed for the uniformly distributed live loads indicated in Table 1607.1 or the following concentrated load:</p> <ol style="list-style-type: none"> 1. For garages restricted to passenger vehicles accommodating not more than nine passengers, 3,000 pounds (13.35 kN) acting on an area of 4.5 inches by 4.5 inches (114 mm by 114 mm). 2. For mechanical parking structures without slab or deck that are used for storing passenger vehicles only, 2,250 pounds (10 kN) per wheel. 					

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	<p>1607.7 1607.8 Heavy vehicle loads. Floors and other surfaces that are intended to support vehicle loads greater than a 10,000-pound (4536 kg) gross vehicle weight rating shall comply with Sections 1607.7.1 through 1607.7.5.</p> <p>1607.17 Library stack rooms. The live loading indicated in Table 1607.1 for library stack rooms applies to stack room floors that support nonmobile, double-faced library book stacks, subject to the following limitations:</p> <ol style="list-style-type: none"> 1. The nominal book stack unit height shall not exceed 90 inches (2,290 mm). 2. The nominal shelf depth shall not exceed 12 inches (305 mm) for each face. 3. Parallel rows of double-faced book stacks shall be separated by aisles not less than 36 inches (914 mm) wide. <p>1607.18 Sidewalks, vehicular driveways, and yards subject to trucking. The live loading indicated in Table 1607.1 for sidewalks, vehicular driveways, and yards subject to trucking shall comply with the requirements of this section.</p> <p>1607.18.1 Uniform loads. In addition to the loads indicated in Table 1607.1, other uniform loads in accordance with an approved method which contains provisions for truck loading, shall be considered where appropriate.</p> <p>1607.18.2 Concentrated loads. The concentrated wheel load indicated in Table 1607.1 shall be applied on an area of 4.5 inches by 4.5 inches (114 mm by 114 mm).</p> <p>1607.19 Stair treads. The concentrated load indicated in Table 1607.1 for stair treads shall be applied on an area of 2 inches by 2 inches (51 mm by 51 mm). This load need not be assumed to act concurrently with the uniform load.</p> <p>1607.20 Residential Attics The live loads indicated in Table 1607.1 for attics in residential occupancies shall comply with the requirements of this section.</p>					

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	<p>1607.20.1 Uninhabitable attics without storage. In residential occupancies, uninhabitable attic areas without storage are those where the maximum clear height between the joists and rafters is less than 42 inches (1067 mm), or where there are not two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches (1067 mm) in height by 24 inches (610 mm) in width, or greater, within the plane of the trusses. The live load in Table 1607.1 need not be assumed to act concurrently with any other live load requirement.</p> <p>1607.20.2 Uninhabitable attics with storage. In residential occupancies, uninhabitable attic areas with storage are those where the maximum clear height between the joist and rafter is 42 inches (1067 mm) or greater, or where there are two or more adjacent trusses with web configurations capable of accommodating an assumed rectangle 42 inches (1067 mm) in height by 24 inches (610 mm) in width, or greater, within the plane of the trusses. The live load in Table 1607.1 need only be applied to those portions of the joists or truss bottom chords where both of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The attic area is accessed from an opening not less than 20 inches (508 mm) in width by 30 inches (762 mm) in length that is located where the clear height in the attic is not less than 30 inches (762 mm). 2. The slope of the joists or truss bottom chords is not greater than two units vertical in 12 units horizontal. <p>The remaining portions of the joists or truss bottom chords shall be designed for a uniformly distributed concurrent live load of not less than 10 pounds per square foot (0.48 kN/m²).</p> <p>1607.20.3 Attics served by stairs. Attic spaces served by stairways other than the pull-down type shall be designed to support the minimum live load specified for habitable attics and sleeping rooms.</p>																
S58-19	<p style="text-align: center;">TABLE 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L₀ , AND MINIMUM CONCENTRATED LIVE LOADS^g</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1"> <thead> <tr> <th>OCCUPANCY OR USE</th> <th>UNIFORM (psf)</th> <th>CONCENTRATED (pounds)</th> </tr> </thead> <tbody> <tr> <td>24. Recreational uses:</td> <td></td> <td>—</td> </tr> <tr> <td>Bowling alleys, poolrooms and similar uses</td> <td>75^m</td> <td></td> </tr> <tr> <td>Dance halls and ballrooms</td> <td>100^m</td> <td></td> </tr> </tbody> </table>	OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)	24. Recreational uses:		—	Bowling alleys, poolrooms and similar uses	75 ^m		Dance halls and ballrooms	100 ^m			X		Clarification
OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)															
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S59-19	<p>Committee Reason: This proposal coordinates the Roof live load item in Table 1607.1 of the IBC with the Roof live load item in Table 4.3-1 in the referenced design load standard, Minimum Design Loads and Associated Criteria for Buildings and Other Structures (ASCE 7). Both the content and the layout of the Roof item is revised for coordination, including the associated footnote, Footnote L. The modification revises the wording for improved readability and replaces an item which was inadvertently deleted. (Vote: 14-0)</p>		X			Clarification															
S61-19	<p style="text-align: center;">TABLE 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L₀ , AND MINIMUM CONCENTRATED LIVE LOADS^g</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1"> <thead> <tr> <th>OCCUPANCY OR USE</th> <th>UNIFORM (psf)</th> <th>CONCENTRATED (pounds)</th> </tr> </thead> <tbody> <tr> <td>31. Storage areas above ceilings</td> <td>20</td> <td></td> </tr> <tr> <td>32. Storage warehouses (shall be designed for heavier loads if required for anticipated storage)</td> <td></td> <td>—</td> </tr> <tr> <td>Heavy</td> <td>250ⁿ</td> <td></td> </tr> <tr> <td>Light</td> <td>125ⁿ</td> <td></td> </tr> </tbody> </table>	OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)	31. Storage areas above ceilings	20		32. Storage warehouses (shall be designed for heavier loads if required for anticipated storage)		—	Heavy	250 ⁿ		Light	125 ⁿ			X		Clarification	
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S62-19	<p style="text-align: center;">TABLE 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS, L₀ , AND MINIMUM CONCENTRATED LIVE LOADS^g</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">OCCUPANCY OR USE</th> <th style="width: 50%;">UNIFORM (psf)</th> <th style="width: 25%;">CONCENTRATED (pounds)</th> </tr> </thead> <tbody> <tr> <td>5. Balconies and decks^h</td> <td>1.5 times the live load for the area served, not required to exceed 100</td> <td style="text-align: center;">—</td> </tr> </tbody> </table> <p><small>h. See Section 1604.8.3 for decks attached to exterior walls.</small></p>	OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)	5. Balconies and decks ^h	1.5 times the live load for the area served, not required to exceed 100	—		X			Clarification
OCCUPANCY OR USE	UNIFORM (psf)	CONCENTRATED (pounds)										
5. Balconies and decks ^h	1.5 times the live load for the area served, not required to exceed 100	—										
S63-19	1607.2 Loads not specified. For occupancies or uses not designated in Table 1607.1 Section 1607, the live load shall be determined in accordance with a method <i>approved by the building official</i> .		X			Clarification						
S66-19	1607.8.1.1 Concentrated load. Handrails and guards shall be designed to resist a concentrated load of 200 pounds (0.89 kN) in accordance with Section 4.5.1.1 of 4.5.1 of ASCE 7.		X			Clarification						
S67-19	1607.8.1.2 Intermediate rails. Guard component loads. Intermediate rails (all those except the handrail), balusters and panel fillers shall Balusters, panel fillers, and guard infill components, including all rails except the handrail and the top rail, shall be designed to resist a concentrated load of 50 pounds (0.22 kN) in accordance with Section 4.5.1.1 of 4.5.1.2 of ASCE 7.		X			Clarification						
S68-19	1607.8.2 Grab bars, shower seats and accessible benches bench seats. Grab bars, shower seats and <i>accessible benches</i> bench seats shall be designed to resist a single concentrated load of 250 pounds (1.11 kN) applied in any direction at any point on the grab bar, or shower seat, or seat of the accessible bench so as to produce the maximum load effects.		X			Clarification						
S69-19	1607.10.4 Fall arrest and lifeline anchorages. In addition to any other applicable live loads, fall arrest and lifeline anchorages and structural elements that support these anchorages shall be designed for a live load of not less than 3,100 pounds (13.8 kN) for each attached lifeline, in every any direction that a fall arrest load can be applied.		X			Clarification						
S70-19	1607.10.4 Fall arrest, and lifeline and rope descent system anchorages. In addition to any other applicable live loads, fall arrest and lifeline , lifeline, and rope descent system anchorages and structural elements that support these anchorages shall be designed for a live load of not less than 3,100 pounds (13.8 kN) for each attached lifeline line line, in every direction that a fall arrest the load can be applied. <u>Anchorage of horizontal lifelines and the structural elements that support these anchorages shall be designed for the maximum tension that develops in the horizontal lifeline from these live loads.</u>			X	Minimal	Clarification						

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
S71-19	<p>1607.13 Roof loads. The structural supports of roofs and marquees shall be designed to resist wind and, where applicable, snow and earthquake loads, in addition to the dead load of construction and the appropriate live loads as prescribed in this section, or as set forth in Table 1607.1. The live loads acting on a sloping surface shall be assumed to act vertically on the horizontal projection of that surface.</p> <p>1607.13.1 Distribution of roof loads. Where uniform roof live loads are reduced to less than 20 psf (0.96 kN/m²) in accordance with Section 1607.13.2.1 and are applied to the design of structural members arranged so as to create continuity, the reduced roof live load shall be applied to adjacent spans or to alternate spans, whichever produces the most unfavorable <i>load effect</i>. See Section 1607.13.2 for reductions in minimum roof live loads and Section 7.5 of ASCE 7 for partial snow loading.</p> <p>1607.13.2 General Reduction in uniform roof live loads. The minimum uniformly distributed live loads of roofs and marquees, L_o, in Table 1607.1 are permitted to be reduced in accordance with Section 1607.13.2.1.</p> <p>1607.13.2.1 Ordinary roofs, awnings and canopies. Ordinary flat, pitched and curved roofs, and awnings and canopies other than of fabric construction supported by a skeleton structure, are permitted to be designed for a reduced uniformly distributed roof live load, L_r, as specified in the following equations or other controlling combinations of loads as specified in Section 1605, whichever produces the greater <i>load effect</i>.</p> <p>In structures such as greenhouses, where special scaffolding is used as a work surface for workers and materials during maintenance and repair operations, a lower roof load than specified in the following equations shall not be used unless <i>approved by the building official</i>. Such structures shall be designed for a minimum roof live load of 12 psf (0.58 kN/m²).</p> <p>$L_r = L_o R_1 R_2 \quad \text{(Equation 16-26)}$</p> <p>where: $0.58 \leq L_r \leq 0.96$</p> <p>L_o = Unreduced roof live load per square foot (m²) of horizontal projection supported by the member (see Table 1607.1). L_r = Reduced roof live load per square foot (m²) of horizontal projection supported by the member.</p>		X			Clarification

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CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>where: $12 \leq L_r \leq 20$</p> <p>For SI: $L_r = L_o R_1 R_2$</p> <p>The reduction factors R_1 and R_2 shall be determined as follows:</p> <p>$R_1 = 1$ for $A_t \leq 200$ square feet (18.58 m²) (Equation 16-27)</p> <p>$R_1 = 1.2 - 0.001A_t$, for 200 square feet < A_t < 600 square feet (Equation 16-28)</p> <p>For SI: $1.2 - 0.011A_t$, for 18.58 square meters < A_t < 55.74 square meters</p> <p>$R_1 = 0.6$ for $A_t \geq 600$ square feet (55.74 m²) (Equation 16-29)</p> <p>where:</p> <p>A_t = Tributary area (span length multiplied by effective width) in square feet (m²) supported by the member, and</p> <p>$R_2 = 1$ for $F \leq 4$ (Equation 16-30)</p> <p>$R_2 = 1.2 - 0.05 F$ for $4 < F < 12$ (Equation 16-31)</p> <p>$R_2 = 0.6$ for $F \geq 12$ (Equation 16-32)</p> <p>where:</p> <p>F = For a sloped roof, the number of inches of rise per foot (for SI: $F = 0.12 \times$ slope, with slope expressed as a percentage), or for an arch or dome, the rise-to-span ratio multiplied by 32.</p> <p>1607.13.3 1607.13.2.2 Occupiable roofs. Areas of roofs that are occupiable, such as <i>vegetative roofs</i>, roof gardens or for assembly or other similar purposes, and marquees are permitted to have their uniformly distributed live loads reduced in accordance with Section 1607.11.</p>					

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase					
Sub Code:									
	<p>1607.13.3.1 1607.13.3 Vegetative and landscaped roofs. The weight of all landscaping materials shall be considered as dead load and shall be computed on the basis of saturation of the soil as determined in accordance with Section 3.1.4 of ASCE 7. The uniform design live load in unoccupied landscaped areas on roofs shall be 20 psf (0.958 kN/m²). The uniform design live load for occupied landscaped areas on roofs shall be determined in accordance with Table 1607.1.</p>								
S72-19	<p>1607.13.5.2.1 1607.13.5.3 Photovoltaic panels installed on open grid roof structures. Structures with open grid framing and without a roof deck or sheathing supporting photovoltaic panel systems shall be designed to support the uniform and concentrated roof live loads specified in Section 1607.13.5.1, except that the uniform roof live load shall be permitted to be reduced to 12 psf (0.57 kN/m²).</p> <p>1607.13.5.3 1607.13.5.4 Photovoltaic panels or modules installed as an independent structure. Ground-mounted photovoltaic (PV) panel systems. Solar photovoltaic panels or modules <u>Ground-mounted photovoltaic (PV) panel systems</u> that are independent structures and do not have accessible/occupied space underneath are not required to accommodate a roof photovoltaic live load, provided that the area under the structure is restricted to keep the public away. Other loads and combinations in accordance with Section 1605 shall be accommodated. Solar photovoltaic panels or modules that are designed to be the roof, span to structural supports and have accessible/occupied space underneath shall have the panels or modules and all supporting structures designed to support a roof photovoltaic live load, as defined in Section 1607.13.5.1 in combination with other applicable loads. Solar photovoltaic panels or modules in this application are not permitted to be classified as “not accessible” in accordance with Section 1607.13.5.1.</p> <p>1607.13.5.4 1607.13.5.5 Ballasted photovoltaic panel systems. Roof structures that provide support for ballasted <i>photovoltaic panel systems</i> shall be designed, or analyzed, in accordance with Section 1604.4; checked in accordance with Section 1604.3.6 for deflections; and checked in accordance with Section 1611 for ponding.</p>		X		Clarification				
S73-19	<p>1607.14.2 Vertical impact force. The maximum wheel loads of the crane shall be increased by the following percentages to determine <u>account for the induced effects of vertical impact or vibration force:</u></p> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 80%;">Monorail cranes (powered)</td> <td style="text-align: center;">25 percent</td> </tr> <tr> <td>Cab-operated or remotely operated bridge cranes (powered)</td> <td style="text-align: center;">25 percent</td> </tr> </table>	Monorail cranes (powered)	25 percent	Cab-operated or remotely operated bridge cranes (powered)	25 percent		X		Clarification
Monorail cranes (powered)	25 percent								
Cab-operated or remotely operated bridge cranes (powered)	25 percent								

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	Pendant-operated bridge cranes (powered)	10 percent				
	Bridge cranes or monorail cranes with hand-gear bridge, trolley and hoist	0 percent				
S74-19	<p>NOTE: See ASCE 7 Tables 7.2-2 for Colorado, see Table 7.2-3 for Idaho, see Table 7.2-4 for Montana, see Table 7.2-5 for Washington, see Table 7.2-6 for New Mexico, see Table 7.2-7 for Oregon, and see Table 7.2-8 for New Hampshire.</p> <p style="text-align: center;">FIGURE 1608.2 GROUND SNOW LOADS, p_g, FOR THE UNITED STATES (psf)</p>		X			Clarification
S76-19	1610.2 Uplift loads on floor and foundations. Basement floors, slabs on ground, foundations, and similar approximately horizontal elements below grade shall be designed to resist uplift loads where applicable. The upward pressure of water shall be taken as the full hydrostatic pressure applied over the entire area. The hydrostatic load shall be measured from the underside of the <u>construction element</u>			X	Minimal depending on design practice	Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	being evaluated. The design for upward loads caused by expansive soils shall comply with Section 1808.6.					
S77-19	<p>Revise as follows:</p> <p>1610.1 General. Foundation walls and retaining walls shall be designed to resist lateral soil loads <u>from adjacent soil</u>. Soil loads specified in Table 1610.1 shall be used as the minimum design lateral soil loads unless determined otherwise by a geotechnical investigation in accordance with Section 1803. Foundation walls and other walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure. Retaining walls free to move and rotate at the top shall be permitted to be designed for active pressure. Design lateral <u>Lateral</u> pressure from surcharge loads shall be added to the lateral earth pressure soil load. Design lateral <u>Lateral</u> pressure shall be increased if <u>expansive soils are present</u> at the site are expansive. Foundation walls shall be designed to support the weight of the full hydrostatic pressure of undrained backfill unless a drainage system is installed in accordance with Sections 1805.4.2 and 1805.4.3.</p> <p>Exception: Foundation walls extending not more than 8 feet (2438 mm) below grade and laterally supported at the top by flexible diaphragms shall be permitted to be designed for active pressure.</p>		X			Clarification
S79-19	<p>1611.1 Design rain loads. Each portion of a roof shall be designed to sustain the load of rainwater that will accumulate on it if the primary drainage system for that portion is blocked plus the uniform load caused by water that rises above the inlet of the secondary drainage system at its design flow as per the requirements of Chapter 8 of ASCE 7. The design rainfall shall be based on the 100-year hourly <u>rainfall rate indicated in Figure 1611.1 15-minute duration event</u>, or on other rainfall rates determined from <i>approved</i> local weather data. <u>Alternatively, a design rainfall of twice the 100-year hourly rainfall rate indicated in Figure 1611.1 shall be permitted.</u></p> <p style="text-align: center;">$R = 5.2(d_s + d_h)$ (Equation 16-35)</p> <p>where:</p> <p>d_h = Additional depth of water on the undeflected roof above the inlet of secondary drainage system at its design flow (in other words, the hydraulic head), in inches (mm).</p> <p>d_s = Depth of water on the undeflected roof up to the inlet of secondary drainage system when the primary drainage system is blocked (in other words, the static head), in</p>			X	Minimal	Clarification

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		Decrease	None	Increase		
Sub Code:						
	<p>inches (mm).</p> <p>$R =$ Rain load on the undeflected roof, in psf (kN/m²). Where the phrase “undeflected roof” is used, deflections from loads (including dead loads) shall not be considered when determining the amount of rain on the roof.</p> <p>For SI: $R = 0.0098(d_s + d_h)$</p> <p>1611.2 Ponding instability. Susceptible bays of roofs shall be evaluated for ponding instability in accordance with Section 8.4 Chapter 7 and Chapter 8 of ASCE 7.</p>					
S80-19	<p>1612.4 Flood hazard documentation. The following documentation shall be prepared and sealed by a <i>registered design professional</i> and submitted to the <i>building official</i>:</p> <p>1. For construction in <i>flood hazard areas</i> other than <i>coastal high hazard areas</i> or <i>coastal A zones</i>:</p> <p>1.1. The elevation of the lowest floor, including the basement, as required by the lowest floor elevation inspection in Section 110.3.3 and for the final inspection in Section 110.3.11.1.</p> <p>1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.7.2.1 of ASCE 24, <i>construction documents</i> shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.7.2.2 of ASCE 24.</p> <p>1.3. For dry floodproofed nonresidential buildings, <i>construction documents</i> shall include a statement that the dry floodproofing is designed in accordance with ASCE 24 <u>and shall include the flood emergency plan specified in Chapter 6 of ASCE 24.</u></p> <p>2. For construction in <i>coastal high hazard areas</i> and <i>coastal A zones</i>:</p> <p>2.1. The elevation of the bottom of the lowest horizontal structural member as required by the lowest floor elevation inspection in Section 110.3.3 and for the final inspection in Section 110.3.11.1.</p> <p>2.2. <i>Construction documents</i> shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects</p>		X		Clarification	

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Sub Code:						
	<p>of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.</p> <p>2.3. For breakaway walls designed to have a resistance of more than 20 psf (0.96 kN/m²) determined using <i>allowable stress design, construction documents</i> shall include a statement that the breakaway wall is designed in accordance with ASCE 24.</p>					
S81-19	<p>1612.4 Flood hazard documentation. The following documentation shall be prepared and sealed by a <i>registered design professional</i> and submitted to the <i>building official</i>:</p> <p>1. For construction in flood hazard areas other than coastal high hazard areas or coastal A zones:</p> <p>1.1. The elevation of the lowest floor, including the basement, as required by the lowest floor elevation inspection in Section 110.3.3 and for the final inspection in Section 110.3.11.1.</p> <p>1.2. For fully enclosed areas below the design flood elevation where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.7.2.1 of ASCE 24, construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.7.2.2 of ASCE 24.</p> <p>1.3. For dry floodproofed nonresidential buildings, construction documents shall include a statement that the dry floodproofing is designed in accordance with ASCE 24.</p> <p>2. For construction in coastal high hazard areas and coastal A zones:</p> <p>2.1. The elevation of the bottom of the lowest horizontal structural member as required by the lowest floor elevation inspection in Section 110.3.3 and for the final inspection in Section 110.3.11.1.</p> <p>2.2. Construction documents shall include a statement that the building is designed in accordance with ASCE 24, including that the pile or column foundation and building or structure to be attached thereto is designed to be anchored to resist flotation, collapse and lateral movement due to the effects of wind and flood loads acting simultaneously on all building components, and other load requirements of Chapter 16.</p> <p>2.3. For breakaway walls designed to have a resistance of more than 20 psf (0.96 kN/m²) determined using allowable stress design, construction documents shall include a statement that the breakaway wall is designed in accordance with ASCE 24.</p>		X			Clarification

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	<p><u>2.4. For breakaway walls where provisions to allow for the automatic entry and exit of floodwaters do not meet the minimum requirements in Section 2.7.2.1 of ASCE 24, construction documents shall include a statement that the design will provide for equalization of hydrostatic flood forces in accordance with Section 2.7.2.2 of ASCE 24.</u></p>					
S90-19	<p>1704.6 Structural observations. Where required by the provisions of Section 1704.6.1, 1704.6.2 or 1704.6.3, the owner or the owner’s authorized agent shall employ a <i>registered design professional</i> to perform structural observations. The structural observer shall visually observe representative locations of structural systems, details, and load paths for general conformance to the design intent as defined in the approved construction documents. Structural observation does not include or waive the responsibility for the inspections in Section 110 or the <i>special inspections</i> in Section 1705 or other sections of this code.</p> <p>Prior to the commencement of observations, the structural observer shall submit to the <i>building official</i> a written statement identifying the frequency and extent of structural observations.</p> <p>At the conclusion of the work included in the permit, the structural observer shall submit to the <i>building official</i> a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer’s knowledge, have not been resolved.</p>		X			Clarification
S92-19	<p>1704.6.1 Structural observations for structures. Structural observations shall be provided for those structures where one or more of the following conditions exist:</p> <ol style="list-style-type: none"> 1. The structure is classified as Risk Category III or IV. 2. The structure is a high-rise building. 3. <u>The structure is assigned to Seismic Design Category E, and is greater than two stories above the grade plane.</u> 3-4. Such observation is required by the registered design professional responsible for the structural design. 4-5. Such observation is specifically required by the building official. <p>1704.6.2 Structural observations for seismic resistance. Structural observations shall be provided for those structures assigned to Seismic Design Category D, E or F where one or more of the following conditions exist:</p> <ol style="list-style-type: none"> 1. The structure is classified as Risk Category III or IV. 		X			Clarification

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	<p>2. The structure is assigned to Seismic Design Category E, is classified as Risk Category I or II, and is greater than two stories above the grade plane.</p> <p>1704.6.3 Structural observations for wind resistance. Structural observations shall be provided for those structures sited where V is 130 mph (58 m/sec) or greater and the structure is classified as Risk Category III or IV.</p>																																									
S97-19	<p style="text-align: center;">TABLE 1705.3</p> <p>REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION</p>			X	Minimal	Incorporates ACI 550.5 standard for safety																																				
S99-19	<p>1705.4.1 Empirically designed masonry, glass Glass unit masonry and masonry veneer in Risk Category IV. <i>Special inspections</i> and tests for empirically designed masonry, glass unit masonry or masonry veneer designed in accordance with Section 2109, 2110 or Chapter 14, respectively, where they are part of a structure classified as <i>Risk Category IV</i> shall be performed in accordance with TMS 402, Level B Quality Assurance.</p>		X			Clarification																																				
S100-19	<p>1705.5.3 Mass timber construction. <i>Special inspections of Mass Timber elements in Types IV-A, IV-B and IV-C construction shall be in accordance with Table 1705.5.3.</i></p> <p style="text-align: center;">TABLE 1705.5.3</p> <p>REQUIRED SPECIAL INSPECTIONS OF MASS TIMBER CONSTRUCTION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Type</th> <th>Continuous Special Inspection</th> <th>Periodic Special Inspection</th> </tr> </thead> <tbody> <tr> <td><u>1. Inspection of anchorage and connections of mass timber construction to timber deep foundation systems.</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> <tr> <td><u>2. Inspect erection of mass timber construction</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> <tr> <td><u>3. Inspection of connections where installation methods are required to meet design loads.</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <td><u>3.1. Threaded fasteners</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <td><u>3.1.1. Verify use of proper installation equipment.</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> <tr> <td><u>3.1.2. Verify use of pre-drilled holes where required.</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> <tr> <td><u>3.1.3. Inspect screws, including diameter, length, head type, spacing, installation angle, and depth.</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> <tr> <td><u>3.2. Adhesive anchors installed in horizontal or upwardly inclined orientation to resist sustained tension loads</u></td> <td style="text-align: center;">X</td> <td style="text-align: center;">-</td> </tr> <tr> <td><u>3.3. Adhesive anchors not defined in 3.2.</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> <tr> <td><u>3.4. Bolted connections</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> <tr> <td><u>3.5. Concealed connections</u></td> <td style="text-align: center;">-</td> <td style="text-align: center;">X</td> </tr> </tbody> </table>	Type	Continuous Special Inspection	Periodic Special Inspection	<u>1. Inspection of anchorage and connections of mass timber construction to timber deep foundation systems.</u>	-	X	<u>2. Inspect erection of mass timber construction</u>	-	X	<u>3. Inspection of connections where installation methods are required to meet design loads.</u>	-	-	<u>3.1. Threaded fasteners</u>	-	-	<u>3.1.1. Verify use of proper installation equipment.</u>	-	X	<u>3.1.2. Verify use of pre-drilled holes where required.</u>	-	X	<u>3.1.3. Inspect screws, including diameter, length, head type, spacing, installation angle, and depth.</u>	-	X	<u>3.2. Adhesive anchors installed in horizontal or upwardly inclined orientation to resist sustained tension loads</u>	X	-	<u>3.3. Adhesive anchors not defined in 3.2.</u>	-	X	<u>3.4. Bolted connections</u>	-	X	<u>3.5. Concealed connections</u>	-	X			X	Minimal (0.15-0.30%) special inspection required for new construction type	Necessary addition for clarification for new construction type
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		Decrease	None	Increase																												
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S102-19	<p>1705.6 Soils. <i>Special inspections</i> and tests of existing site soil conditions, fill placement and load-bearing requirements shall be performed in accordance with this section and Table 1705.6. The <i>approved geotechnical report</i> and the <i>construction documents</i> prepared by the <i>registered design professionals</i> shall be used to determine compliance. During fill placement, the special inspector shall verify that proper materials and procedures are used in accordance with the provisions of the approved geotechnical report.</p> <p>Exception: Where Section 1803 does not require reporting of materials and procedures for fill placement, the special inspector shall verify that the in-place dry density of the compacted fill is not less than 90 percent of the maximum dry density at optimum moisture content determined in accordance with ASTM D1557.</p> <p style="text-align: center;">TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS</p> <table border="1"> <thead> <tr> <th>TYPE</th> <th>CONTINUOUS SPECIAL INSPECTION</th> <th>PERIODIC SPECIAL INSPECTION</th> </tr> </thead> <tbody> <tr> <td>1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.</td> <td style="text-align: center;">—</td> <td style="text-align: center;">X</td> </tr> <tr> <td>2. Verify excavations are extended to proper depth and have reached proper material.</td> <td style="text-align: center;">—</td> <td style="text-align: center;">X</td> </tr> <tr> <td>3. Perform classification and testing of compacted fill materials.</td> <td style="text-align: center;">—</td> <td style="text-align: center;">X</td> </tr> <tr> <td>4. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the <i>approved geotechnical report</i>. Verify densities and lift thicknesses during placement and com-paction of compacted fill.</td> <td style="text-align: center;">X</td> <td style="text-align: center;">—</td> </tr> <tr> <td>5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.</td> <td style="text-align: center;">—</td> <td style="text-align: center;">X</td> </tr> </tbody> </table> <p style="text-align: center;">TABLE 1705.7 REQUIRED SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP FOUNDATION ELEMENTS</p> <table border="1"> <thead> <tr> <th>TYPE</th> <th>CONTINUOUS SPECIAL INSPECTION</th> <th>PERIODIC SPECIAL INSPECTION</th> </tr> </thead> <tbody> <tr> <td>1. Verify element materials, sizes and lengths comply with the requirements.</td> <td style="text-align: center;">X</td> <td style="text-align: center;">—</td> </tr> <tr> <td>2. Determine capacities of test elements and conduct additional load tests, as required.</td> <td style="text-align: center;">X</td> <td style="text-align: center;">—</td> </tr> </tbody> </table>	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	—	X	2. Verify excavations are extended to proper depth and have reached proper material.	—	X	3. Perform classification and testing of compacted fill materials.	—	X	4. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the <i>approved geotechnical report</i> . Verify densities and lift thicknesses during placement and com-paction of compacted fill.	X	—	5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	—	X	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	1. Verify element materials, sizes and lengths comply with the requirements.	X	—	2. Determine capacities of test elements and conduct additional load tests, as required.	X	—	X			Clarification
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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																
		Decrease	None	Increase																																		
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S103-19	1705.10 Structural Integrity of Deep Foundation Elements. When directed by the registered design professional in responsible charge or by the building official, Whenever there is a reasonable doubt as to the structural integrity of a deep foundation element, an engineering assessment shall be required for structural integrity shall be conducted a deep foundation element. The engineering assessment shall include tests for defects performed in accordance with ASTM D4945, ASTM D5882, ASTM D6760, or ASTM D7949 or other <i>approved</i> method.		X			Clarification																																
S104-19	1705.11 Special inspections for wind resistance. <i>Special inspections</i> for wind resistance specified in Sections 1705.11.1 through 1705.11.3, unless exempted by the exceptions		X			Clarification																																

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Sub Code:						
	<p>to Section 1704.2, are required for buildings and structures constructed in the following areas:</p> <ol style="list-style-type: none"> In wind Exposure Category B, where V_{ass} as determined in accordance with Section 1609.3.1 is 120 is <u>150</u> miles per hour (52.8 67 m/sec) or greater. In wind Exposure Category C or D, where V_{ass} as determined in accordance with Section 1609.3.1 is 110 is <u>140</u> mph (49 62.6 m/sec) or greater. 					
S105-19	<p>1705.12.2 Structural wood. For the <i>seismic force-resisting systems</i> of structures assigned to <i>Seismic Design Category C, D, E or F</i>:</p> <ol style="list-style-type: none"> <i>Continuous special inspection</i> shall be required during field gluing operations of elements of the seismic force-resisting system. <i>Periodic special inspection</i> shall be required for nailing, bolting, anchoring and other fastening of elements of the seismic force-resisting system, including wood shear walls, wood diaphragms, drag struts, braces, shear panels and hold-downs. <p>Exception: <i>Special inspections</i> are not required for wood shear walls, shear panels and diaphragms, including nailing, bolting, anchoring and other fastening to other elements of the seismic force-resisting system, where the lateral resistance is provided by structural sheathing, and the <u>specified</u> fastener spacing at the panel edges is more than 4 inches (102 mm) on center.</p>		X		Clarification	
S107-19	<p>1705.12.7 Storage racks. If required by the Engineer of Record Storage racks, that are 8 feet in height or greater and assigned to Seismic Design Category D, E, or F, shall be <u>provided with periodic special inspection as required by</u> inspected by an inspector designated by the Engineer of Record as detailed in Table 1705.12.7. for adherence with the approved construction documents.</p> <p style="text-align: center;">TABLE 1705.12.7 REQUIRED INSPECTIONS OF STORAGE RACK SYSTEMS</p> <p>2209.3 Certification. For rack sStorage sStructures that are 8 feet in height or greater to the top load level and assigned to Seismic Design Category D, E, or F, if required by the Engineer of Record, at completion of the storage rack installation, the Engineer of Record shall submit a <u>certificate of compliance shall be submitted</u> to the owner or the owner’s authorized agent stating that the work was performed in accordance with <u>approved construction documents</u> and with specifications listed in this section.</p>			X	NA	Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
	MH16.1: 2012: Specification for the Design, Testing and Utilization of Industrial Steel Storage Racks					
S108-19	<p>1709.5 Exterior window and door assemblies. The design pressure rating of exterior windows and doors in buildings shall be determined in accordance with Section 1709.5.1 or 1709.5.2. For exterior windows and doors tested in accordance with Sections 1709.5.1 or 1709.5.2, required design wind pressures determined from ASCE 7 shall be permitted to be converted to allowable stress design by multiplying by 0.6.</p> <p>Exception: Structural wind load design pressures for window units smaller or door assemblies other than the size tested in accordance with Section 1709.5.1 or 1709.5.2 shall be permitted to be higher <u>different</u> than the design value of the tested unit assembly provided such higher pressures are determined by accepted engineering analysis. <u>analysis or validated by an additional test of the window or door assembly to the alternative allowable design pressure in accordance with Section 1709.5.2.</u> Components of the small unit alternate size assembly shall be the same as the tested unit. <u>Where such calculated design pressures are or labeled assembly.</u> Where engineering analysis is used, they it shall be validated by an additional test of the window unit having the highest allowable design pressure. <u>performed in accordance with the analysis procedures of AAMA 2502.</u></p>		X			Provides convenient way to validate exterior windows and doors wind test results based on existing test results
S109-19	<p>1709.5.2 Exterior windows and door assemblies not provided for in Section 1709.5.1. Exterior window and door assemblies shall be tested in accordance with ASTM E330. Exterior window and door assemblies containing glass shall comply with Section 2403. The design pressure for testing shall be calculated in accordance with Chapter 16. Each assembly shall be tested for 10 seconds at a load equal to 1.5 times the design pressure.</p> <p>1709.5.2.1 Garage doors and rolling doors. Garage doors and rolling doors shall be tested in accordance with either ASTM E 330 or ANSI/DASMA 108, and shall meet the acceptance pass/fail criteria of ANSI/DASMA 108. Garage doors and rolling doors shall have be labeled with a permanent label <u>label</u> identifying the door manufacturer, the door model/series number, the positive and negative design wind pressure rating, the installation instruction drawing reference number, and the applicable test standard.</p>			X	Minimal	Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
S110-19	<p>1709.5.3 Wind-borne debris protection. Protection of exterior glazed openings in buildings located in windborne debris regions shall be in accordance with Section 1609.4-2.</p> <p>1709.5.3.1 Impact protective systems testing and labeling. Impact protective systems shall be tested for impact resistance by an approved independent laboratory for compliance with ASTM E 1886 and ASTM E 1996 and impact protective systems shall also be tested for design wind pressure by an approved independent laboratory for compliance with ASTM E 330. Required design wind pressures shall be determined in accordance with Section 1609.6 or ASCE 7, and for the purposes of this section, multiplied by 0.6 to convert to allowable stress design.</p> <p>Impact protective systems shall have a <u>permanent label applied in accordance with Section 1703.5.4</u> identifying the manufacturer, <u>product designation</u>, performance characteristics, and approved inspection agency. Impact protective systems shall have a permanent label applied in accordance with Section 1703.5.4 that provides traceability to the manufacturer, product designation, and performance characteristics.</p>			X	Minimal (\$0.05-0.15/label)	Clarification
S111-19	<p>1803.5.7 Excavation near foundations. Where excavation will reduce support from any foundation, a <i>registered design professional</i> shall prepare an assessment of the structure as determined from examination of the structure, the review of available design documents, <u>available subsurface data</u>, and, if necessary, excavation of test pits. The <i>registered design professional</i> shall determine the requirements for <u>underpinning support</u> and protection <u>of any existing foundation</u> and prepare site-specific plans, details and sequence of work for submission. Such support shall be provided by underpinning, sheeting and bracing, <u>excavation retention systems</u>, or by other means acceptable to the <i>building official</i>.</p>		X			Clarification
S112-19	<p>1804.1 Excavation near foundations. Excavation for any purpose shall not reduce vertical or lateral support for any foundation or adjacent foundation without first underpinning or protecting the foundation against detrimental lateral or vertical movement, or both, <u>in accordance with Section 1803.5.7.</u></p>		X			Clarification
S115-19	<p>1807.2.4 Segmental Retaining Walls. <u>Dry-cast concrete units used in the construction of segmental retaining walls shall comply with ASTM C1372.</u></p>		X			Necessary addition for clarification
S117-19	<p>1808.8.1 Concrete or grout strength and mix proportioning. Concrete or grout in foundations shall have a specified compressive strength (f'_c) not less than the largest applicable value indicated in Table 1808.8.1. Where concrete is placed through a funnel hopper at the</p>		X			Clarification

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	top of a deep foundation element, the concrete mix shall be designed and proportioned so as to produce a cohesive workable mix having a slump of not less than 4 inches (102 mm) and not more than 8 inches (204 mm). Where concrete or grout is to be pumped, the mix design including slump shall be adjusted to produce a pumpable mixture.																	
S122-19	<p>1809.5.1 Frost Protection at Required Exits. Frost protection shall be provided at exterior landings for all required exits <u>with outward swinging doors</u>. Frost protection shall only be required to the extent necessary to ensure the unobstructed opening of the required exit doors.</p> <p>Exception: Landings that serve exits which do not have outward swinging doors.</p>			X	Minimal	Clarification												
S124-19	<p style="text-align: center;">TABLE 1810.3.2.6 ALLOWABLE STRESSES FOR MATERIALS USED IN DEEP FOUNDATION ELEMENTS</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">MATERIAL TYPE AND CONDITION</th> <th style="width: 40%;">MAXIMUM ALLOWABLE STRESS^a</th> </tr> </thead> <tbody> <tr> <td>1. Concrete or grout in compression^b Cast-in-place with a permanent casing in accordance with Section 1810.3.2.7 or Section 1810.3.5.3.4</td> <td style="text-align: center;">0.4 f' c 0.33 f' c</td> </tr> <tr> <td>Cast-in-place in a pipe, tube, other permanent casing or rock</td> <td style="text-align: center;">0.3f' c 0.33f' c</td> </tr> <tr> <td>Cast-in-place without a permanent casing</td> <td style="text-align: center;">0.33f' c-0.27 f_{pc}</td> </tr> <tr> <td>Precast nonprestressed</td> <td></td> </tr> <tr> <td>Precast prestressed</td> <td></td> </tr> </tbody> </table> <p>a. f' cis the specified compressive strength of the concrete or grout; f_{pc} is the compressive stress on the gross concrete section due to effective prestress forces only; f_y is the specified yield strength of reinforcement; F_y is the specified minimum yield stress of steel; F_u is the specified minimum tensile stress of structural steel.</p> <p>b. The stresses specified apply to the gross cross-sectional area within the concrete surface. Where a temporary or permanent casing is used, the inside face of the casing shall be considered to be the concrete surface.</p>	MATERIAL TYPE AND CONDITION	MAXIMUM ALLOWABLE STRESS ^a	1. Concrete or grout in compression ^b Cast-in-place with a permanent casing in accordance with Section 1810.3.2.7 or Section 1810.3.5.3.4	0.4 f' c 0.33 f' c	Cast-in-place in a pipe, tube, other permanent casing or rock	0.3f' c 0.33f' c	Cast-in-place without a permanent casing	0.33f' c-0.27 f _{pc}	Precast nonprestressed		Precast prestressed		X			Minimal	Clarification
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Sub Code:						
	<p>a. $f'c$ is the specified compressive strength of the concrete or grout; f_{pc} is the compressive stress on the gross concrete section due to effective prestress forces only; f_y is the specified yield strength of reinforcement; F_y is the specified minimum yield stress of steel; F_u is the specified minimum tensile stress of structural steel.</p> <p>b. The stresses specified apply to the gross cross-sectional area within the concrete surface. Where a temporary or permanent casing is used, the inside face of the casing shall be considered to be the concrete surface.</p>					
127-19	<p>1810.3.2.6 Allowable stresses. The allowable stresses for materials used in deep foundation elements shall not exceed those specified in Table 1810.3.2.6.</p> <p style="text-align: center;">TABLE 1810.3.2.6 ALLOWABLE STRESSES FOR MATERIALS USED IN DEEP FOUNDATION ELEMENTS</p> <p>a. $f'c$ is the specified compressive strength of the concrete or grout; f_{pc} is the compressive stress on the gross concrete section due to effective prestress forces only; f_y is the specified yield strength of reinforcement; F_y is the specified minimum yield stress of steel; F_u is the specified minimum tensile stress of structural steel.</p> <p>b. The stresses specified apply to the gross cross-sectional area <u>within of the concrete surface for precast prestressed piles and to the net cross-sectional area for all other piles.</u> Where a temporary or permanent casing is used, the inside face of the casing shall be considered to be <u>the outer edge of the concrete surface cross-section.</u></p>		X			Clarification
S129-19	<p>1810.3.3.1 Allowable axial load. The allowable axial load on a deep foundation element shall be determined in accordance with Sections 1810.3.3.1.1 through 1810.3.3.1.9.</p> <p>Exception: Load testing is not required where <u>Where approved by the building official, load testing is not required.</u></p>	X			Minimal	Clarification
S130-19	<p>1810.3.3.1.9 Helical piles. The allowable axial design load, P_a, of helical piles shall be determined as follows:</p> $P_a = 0.5 P_u$ <p>(Equation 18-4) where P_u is the least value of:</p> <p>± Base capacity plus shaft resistance of the helical pile. The base capacity is equal to the sum of the areas of the helical bearing</p>	X			Minimal	Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>plates times the ultimate bearing capacity of the soil or rock comprising the bearing stratum. The shaft resistance <u>is equal to only the area of the shaft</u> above the uppermost helical bearing plate <u>times the ultimate skin resistance shall be considered.</u></p> <ol style="list-style-type: none"> 2. Ultimate capacity determined from well-documented correlations with installation torque. 3. Ultimate capacity determined from load tests when required by Section 1810.3.3.1.2. 4. Ultimate axial capacity of pile shaft. 5. Ultimate axial capacity of pile shaft couplings. 6. Sum of the ultimate axial capacity of helical bearing plates affixed to pile. 					
S131-19	<p>1810.3.4 Subsiding soils or strata. Where deep foundation elements are installed through subsiding fills soils or other subsiding strata and derive support from underlying firmer materials, consideration shall be given to the downward frictional forces potentially imposed on the elements by the subsiding upper strata. Where the influence of subsiding fills soils or strata is considered as imposing loads on the element, the allowable stresses specified in this chapter shall be permitted to be increased where satisfactory substantiating data are submitted.</p>		X			Clarification
S132-19	<p>1810.3.11.2 Seismic Design Categories D through F. For structures assigned to <i>Seismic Design Category D, E or F</i>, deep foundation element resistance to uplift forces or rotational restraint shall be provided by anchorage into the pile cap, designed considering the combined effect of axial forces due to uplift and bending moments due to fixity to the pile cap. Anchorage shall develop not less than 25 percent of the strength of the element in tension. Anchorage into the pile cap shall comply with the following:</p> <p>In the case of uplift, the anchorage shall be capable of developing the least of the following:</p> <ol style="list-style-type: none"> 1. In the case of uplift, the anchorage shall be capable of developing the least of the following: <ol style="list-style-type: none"> 1.1. The nominal tensile strength of the longitudinal reinforcement in a concrete element. 1.2. The nominal tensile strength of a steel element. 1.3. The frictional force developed between the element and the soil multiplied by 1.3. <p>Exception: The anchorage is permitted to be designed to resist the axial tension force resulting from the seismic load effects including</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p>overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7.</p> <p>2. In the case of rotational restraint, the anchorage shall be designed to resist the axial and shear forces, and moments resulting from the seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7 or the anchorage shall be capable of developing the full axial, bending and shear nominal strength of the element.</p> <p>3. The connection between the pile cap and the steel H-piles or unfilled steel pipe piles in structures assigned to Seismic Design Category D, E, or F shall be designed for a tensile force of not less than 10 percent of the pile compression capacity.</p> <p>Exception-Exceptions:</p> <p>1. Connection tensile capacity need not exceed the strength required to resist seismic load effects including overstrength of ASCE 7 Section 12.4.3 or 12.14.3.2.</p> <p>2. Connections need not be provided where the foundation or supported structure does not rely on the tensile capacity of the piles for stability under the design seismic force.</p> <p>Where the vertical lateral-force-resisting elements are columns, the pile cap flexural strengths shall exceed the column flexural strength. The connection between batter piles and pile caps shall be designed to resist the nominal strength of the pile acting as a short column. Batter piles and their connection shall be designed to resist forces and moments that result from the application of seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7.</p>					
S133-19	<p>1810.3.6 Splices. Splices shall be constructed so as to provide and maintain true alignment and position of the component parts of the deep foundation element during installation and subsequent thereto and shall be designed to resist the axial and shear forces and moments occurring at the location of the splice during driving and for design load combinations. Where deep foundation elements of the same type are being spliced, splices shall develop not less than 50 percent of the bending strength of the weaker section. Where deep foundation elements of different materials or different types are being spliced, splices shall develop the full compressive strength and not less than 50 percent of the tension and bending strength of the weaker section. Where structural steel cores are to be spliced, the ends shall be milled or ground to provide full contact and shall be full-depth welded.</p>	X			Minimal	Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Exception: Splices conforming to generally accepted engineering practices where approved by the <i>building official</i> for buildings assigned to Seismic Design Category A or B.</p> <p>Exception: For buildings assigned to Seismic Design Category A or B, splices need not comply with the 50 percent tension and bending strength requirements where justified by supporting data.</p> <p>Splices occurring in the upper 10 feet (3048 mm) of the embedded portion of an element shall be designed to resist at allowable stresses the moment and shear that would result from an assumed eccentricity of the axial load of 3 inches (76 mm), or the element shall be braced in accordance with Section 1810.2.2 to other deep foundation elements that do not have splices in the upper 10 feet (3048 mm) of embedment.</p>					
S134-19	<p>1810.3.8 Precast concrete piles. Precast concrete piles shall be designed and detailed in accordance with ACI 318.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> For Ø precast prestressed piles in Seismic Design Category C, the minimum spiral reinforcement volumetric ratio of spirals or circular hoops required by Section 18.13.5.10.4 of ACI 318 shall not apply in cases where the design includes full consideration of load combinations specified in ASCE 7, Section 2.3.6 or Section 2.4.5 and the applicable overstrength factor, Ω_o. In such cases, minimum spiral <u>transverse</u> reinforcement index shall be as specified in Section 13.4.5.6 of ACI 318. For precast prestressed piles in Seismic Design Categories D through F, the minimum spiral reinforcement volumetric ratio of spirals or circular hoops required by Section 18.13.5.10.5(c) of ACI 318 shall not apply in cases where the design includes full consideration of load combinations specified in ASCE 7, Section 2.3.6 or Section 2.4.5 and the applicable overstrength factor, Ω_o. In such cases, minimum spiral <u>transverse</u> reinforcement shall be as specified in Section 13.4.5.6 of ACI 318. 		X			Clarification
S135-19	<p>1810.3.11.1 Seismic Design Categories C through F. For structures assigned to <i>Seismic Design Category C, D, E or F</i>, concrete deep foundation elements shall be connected to the pile cap in accordance with ACI 318.</p> <p><u>For resistance to uplift forces, anchorage of steel pipes, tubes or H-piles to the pile cap shall be made by means other than concrete</u></p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p><u>bond to the bare steel section. Concrete-filled steel pipes or tubes shall have reinforcement of not less than 0.01 times the cross-sectional area of the concrete fill developed into the cap and extending into the fill a length equal to two times the required cap embedment, but not less than the development length in tension of the reinforcement.</u></p> <p>1810.3.11.1 1810.3.11.2 Seismic Design Categories D through F. For structures assigned to <i>Seismic Design Category D, E or F</i>, deep foundation element resistance to uplift forces or rotational restraint shall be provided by anchorage into the pile cap, designed considering the combined effect of axial forces due to uplift and bending moments due to fixity to the pile cap. Anchorage shall develop not less than 25 percent of the strength of the element in tension. Anchorage into the pile cap shall comply with the following:</p> <ol style="list-style-type: none"> 1. In the case of uplift, the anchorage shall be capable of developing the least of the following: <ol style="list-style-type: none"> 1.1. The nominal tensile strength of the longitudinal reinforcement in a concrete element. 1.2. The nominal tensile strength of a steel element. 1.3. The frictional force developed between the element and the soil multiplied by 1.3. <p>Exception: The anchorage is permitted to be designed to resist the axial tension force resulting from the seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7.</p> <ol style="list-style-type: none"> 2. In the case of rotational restraint, the anchorage shall be designed to resist the axial and shear forces, and moments resulting from the seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7 or the anchorage shall be capable of developing the full axial, bending and shear nominal strength of the element. <p>Where the vertical lateral-force-resisting elements are columns, the pile cap flexural strengths shall exceed the column flexural strength. The connection between batter piles and pile caps shall be designed to resist the nominal strength of the pile acting as a short column. Batter piles and their connection shall be designed to resist forces and moments that result from the application of seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7.</p>					

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
S136-19	<p>1810.3.12 Grade beams. For structures assigned to Seismic Design Category D, E or F, grade <u>Grade beams shall comply with the provisions in Section 18.13.3 of ACI 318 for grade beams, except where they are.</u></p> <p>Exception: <u>Grade beams</u> designed to resist the seismic load effects including overstrength factor in accordance with Section 2.3.6 or 2.4.5 of ASCE 7.</p> <p>1810.3.13 Seismic ties. For structures assigned to Seismic Design Category C, D, E or F, individual deep foundations shall be interconnected by ties. Unless it can be demonstrated that equivalent restraint is provided by reinforced concrete beams within slabs on grade or reinforced concrete slabs on grade or confinement by competent rock, hard cohesive soils or very dense granular soils, ties shall be capable of carrying, in tension or compression, a force equal to the lesser of the product of the larger pile cap or column design gravity load times the seismic coefficient, SDS, divided by 10, and 25 percent of the smaller pile or column design gravity load. Seismic ties shall comply with the provisions of ACI 318.</p> <p>Exception: In Group R-3 and U occupancies of light-frame construction, deep foundation elements supporting foundation walls, isolated interior posts detailed so the element is not subject to lateral loads or exterior decks and patios are not subject to interconnection where the soils are of adequate stiffness, subject to the approval of the <i>building official</i>.</p>		X			Clarification
S137-19	<p>1810.4.1.2 Shafts in unstable soils. Where cast-in-place deep foundation elements are formed through unstable soils, the open hole shall be stabilized by a casing, suitable <u>slurry, or other approved method prior to placing the concrete. Where the casing is withdrawn during concreting, the level of concrete shall be maintained above the bottom of the casing at a sufficient height to offset any hydrostatic or lateral soil pressure. Driven casings shall be mandrel driven their full length in contact with the surrounding soil.</u></p>	X			Minimal	Clarification
S138-19	<p>1810.4.1.3 Driving near uncased concrete. Deep foundation elements shall not be driven within six element diameters center to center in granular soils or within one-half the element length in cohesive soils of an uncased element filled with concrete less than 48 hours old unless <i>approved</i> by the <i>building official</i>. During <u>If driving near uncased concrete elements, causes if the concrete surface in any completed element <u>to rises or drops significantly or bleeds additional water, the</u></u></p>		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	previously completed element shall be replaced. Driven uncased deep foundation elements shall not be installed in soils that could cause heave.					
S139-19	1810.4.1.3 Driving near uncased concrete. Deep foundation elements shall not be driven within six element diameters center to center in granular soils or within one-half the element length in cohesive soils of an uncased element filled with concrete less than 48 hours old unless <i>approved</i> by the <i>building official</i> . If the concrete surface in any completed element rises or drops, the element shall be replaced. Driven uncased deep foundation elements shall not be installed in soils that could cause heave.		X			Clarification
S140-19	1810.4.5 Vibratory driving. Vibratory drivers shall only be used to install deep foundation elements where the element load capacity is verified by load tests in accordance with Section 1810.3.3.1.2. The installation of production elements shall be controlled according to power consumption, rate of penetration or other <i>approved</i> means that ensure element capacities equal or exceed those of the test elements. Exceptions: 1. <u>The pile installation is completed by driving with an impact hammer in accordance with Section 1810.3.3.1.1.</u> 2. <u>The pile is to be used only for lateral resistance.</u>	X			Minimal	Clarification
S141-19	1810.4.11 Helical piles. Helical piles shall be installed to specified embedment depth and torsional resistance criteria as determined by a <i>registered design professional</i> . The torque applied during installation shall not exceed the <u>manufacturer's rated maximum allowable installation torque resistance</u> of the helical pile.		X			Clarification
S143-19	1901.2 Plain and reinforced concrete. Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code. Except for the provisions of Sections 1904 and 1907, the design and construction of slabs on grade shall not be governed by this chapter unless they transmit vertical loads or lateral forces from other parts of the structure to the soil. Precast concrete diaphragms in buildings assigned to <i>Seismic Design Category C, D, E or F</i> shall be designed in accordance with the requirements of ASCE 7, Section 14.2.4.		X			Clarification
S145-19	Modify proposal as follows: 1901.3 Anchoring to concrete. Anchoring to concrete shall be in accordance with ACI 318 as amended in Section 1905, and applies to cast-in (headed bolts, headed studs and hooked J- or L-bolts); ₂ post-installed expansion (torque-controlled and displacement-controlled); ₂ undercut, <u>screw</u> , and adhesive; and screw anchors.		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
S147-19	<p>1901.7 Tolerances for structural concrete. Where not indicated in construction documents, structural tolerances for concrete structural elements shall be in accordance with this section.</p> <p>1901.7.1 Cast-in-place concrete tolerances. Structural tolerances for cast-in-place concrete structural elements shall be in accordance with ACI 117.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Group R-3 detached one or two-family dwellings are not required to comply with this section 2. Shotcrete is not required to comply with this section <p>1901.7.2 Precast concrete tolerances. Structural tolerances for precast concrete structural elements shall be in accordance with ACI ITG-7.</p> <p>Exception: Group R-3 detached one or two-family dwellings are not required to comply with this section.</p>		X			Clarification
S148-19	<p>1902.1.1 Design displacement. Design displacement at each level be the total lateral displacement deflection at the level calculated expected for the design-basis earthquake using the procedures defined in, as specified by Section 12.8.6 of ASCE 7.</p>		X			Clarification
S149-19	<p>1903.1 General. Materials used to produce concrete, concrete itself and testing thereof shall comply with the applicable standards listed in ACI 318.</p> <p>Exception: The following standards as referenced in Chapter 35 shall be permitted to be used.</p> <ol style="list-style-type: none"> 1. ASTM C150 2. ASTM C595 3. ASTM C1157 		X			Clarification
S152-19	<p style="text-align: center;">SECTION 1906</p> <p style="text-align: center;">FOOTINGS FOR LIGHT-FRAME CONSTRUCTION</p> <p>1906.1 Plain concrete footings. For Group R-3 occupancies and buildings of other occupancies less than two stories above grade plane of light-frame construction, the required thickness of plain concrete footings is permitted to be reduced to 6 inches (152 mm), provided that the footing does not extend more than 4 inches (102 mm) on either side of the supported wall.</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
S155-19	<p>1908.1 General. Shotcrete is mortar or concrete that is pneumatically projected at high velocity onto a surface. Except as specified in this section, shotcrete shall conform to the requirements of this chapter for plain or reinforced concrete <u>shall be in accordance with the requirements of ACI 318.</u></p> <p>1908.2 Proportions and materials. Shotcrete proportions shall be selected that allow suitable placement procedures using the delivery equipment selected and shall result in finished in-place hardened shotcrete meeting the strength requirements of this code.</p> <p>1908.3 Aggregate. Coarse aggregate, if used, shall not exceed $\frac{3}{4}$ inch (19.1 mm).</p> <p>1908.4 Reinforcement. Reinforcement used in shotcrete construction shall comply with the provisions of Sections 1908.4.1 through 1908.4.4.</p> <p>1908.4.1 Size. The maximum size of reinforcement shall be No. 5 bars unless it is demonstrated by preconstruction tests that adequate encasement of larger bars will be achieved.</p> <p>1908.4.2 Clearance. Where No. 5 or smaller bars are used, there shall be a minimum clearance between parallel reinforcement bars of $2\frac{1}{2}$ inches (64 mm). When bars larger than No. 5 are permitted, there shall be a minimum clearance between parallel bars equal to six diameters of the bars used. Where two curtains of steel are provided, the curtain nearer the nozzle shall have a minimum spacing equal to 12 bar diameters and the remaining curtain shall have a minimum spacing of six bar diameters.</p> <p>Exception: Subject to the approval of the building official, required clearances shall be reduced where it is demonstrated by preconstruction tests that adequate encasement of the bars used in the design will be achieved.</p>		X			Clarification

	<p>1908.4.3 Splices. Lap splices of reinforcing bars shall utilize the noncontact lap splice method with a minimum clearance of 2 inches (51 mm) between bars. The use of contact lap splices necessary for support of the reinforcing is permitted where approved by the building official, based on satisfactory preconstruction tests that show that adequate encasement of the bars will be achieved, and provided that the splice is oriented so that a plane through the center of the spliced bars is perpendicular to the surface of the shotcrete.</p> <p>1908.4.4 Spirally tied columns. Shotcrete shall not be applied to spirally tied columns.</p> <p>1908.5 Preconstruction tests. Where preconstruction tests are required by Section 1908.4, a test panel shall be shot, cured, cored or sawn, examined and tested prior to commencement of the project. The sample panel shall be representative of the project and simulate job conditions as closely as possible. The panel thickness and reinforcing shall reproduce the thickest and most congested area specified in the structural design. It shall be shot at the same angle, using the same nozzleman and with the same concrete mix design that will be used on the project. The equipment used in preconstruction testing shall be the same equipment used in the work requiring such testing, unless substitute equipment is approved by the building official. Reports of preconstruction tests shall be submitted to the building official as specified in Section 1704.5.</p> <p>1908.6 Rebound. Any rebound or accumulated loose aggregate shall be removed from the surfaces to be covered prior to placing the initial or any succeeding layers of shotcrete. Rebound shall not be used as aggregate.</p> <p>1908.7 Joints. Except where permitted herein, unfinished work shall not be allowed to stand for more than 30 minutes unless edges are sloped to a thin edge. For structural elements that will be under compression and for construction joints shown on the approved construction documents, square joints are permitted. Before placing additional material adjacent to previously applied work, sloping and square edges shall be cleaned and wetted.</p> <p>1908.8 Damage. In place shotcrete that exhibits sags, sloughs, segregation, honeycombing, sand pockets or other obvious defects shall be removed and replaced. Shotcrete above sags and sloughs shall be removed and replaced while still plastic.</p> <p>1908.9 Curing. During the curing periods specified herein, shotcrete shall be maintained above 40°F (4°C) and in moist condition.</p> <p>1908.9.1 Initial curing. Shotcrete shall be kept continuously moist for 24 hours after shotcreting is complete or shall be sealed with an approved curing compound.</p>					
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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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	<p>1908.9.2 Final curing. Final curing shall continue for seven days after shotcreting, or for three days if high-early strength cement is used, or until the specified strength is obtained. Final curing shall consist of the initial curing process or the shotcrete shall be covered with an approved moisture-retaining cover.</p> <p>1908.9.3 Natural curing. Natural curing shall not be used in lieu of that specified in this section unless the relative humidity remains at or above 85 percent, and is authorized by the registered design professional and approved by the building official.</p> <p>1908.10 Strength tests. Strength tests for shotcrete shall be made by an approved agency on specimens that are representative of the work and that have been water soaked for not fewer than 24 hours prior to testing. Where the maximum size aggregate is larger than $\frac{3}{8}$ inch (9.5 mm), specimens shall consist of not less than three 3-inch-diameter (76 mm) cores or 3-inch (76 mm) cubes. Where the maximum size aggregate is $\frac{3}{8}$ inch (9.5 mm) or smaller, specimens shall consist of not less than 2-inch-diameter (51 mm) cores or 2-inch (51 mm) cubes.</p> <p>1908.10.1 Sampling. Specimens shall be taken from the in-place work or from test panels, and shall be taken not less than once each shift, but not less than one for each 50 cubic yards (38.2 m³) of shotcrete.</p> <p>1908.10.2 Panel criteria. Where the maximum size aggregate is larger than $\frac{3}{8}$ inch (9.5 mm), the test panels shall have minimum dimensions of 18 inches by 18 inches (457 mm by 457 mm). Where the maximum size aggregate is $\frac{3}{8}$ inch (9.5 mm) or smaller, the test panels shall have minimum dimensions of 12 inches by 12 inches (305 mm by 305 mm). Panels shall be shot in the same position as the work, during the course of the work and by the nozzle men doing the work. The conditions under which the panels are cured shall be the same as the work.</p> <p>1908.10.3 Acceptance criteria. The average compressive strength of three cores from the in-place work or a single test panel shall equal or exceed $0.85 f'_c$ with no single core less than $0.75 f'_c$. The average compressive strength of three cubes taken from the in-place work or a single test panel shall equal or exceed f'_c with no individual cube less than $0.88 f'_c$. To check accuracy, locations represented by erratic core or cube strengths shall be retested.</p>					

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
S156-19	<p>2109.2.4.8 Exterior finish. Exterior finishes applied to adobe masonry walls shall be of any type permitted by this code and shall comply with the provisions of this section and or with Chapter 14, except where stated otherwise in this section.</p> <p>2109.2.4.8.1 Purpose, and type Where required. Unstabilized adobe masonry walls shall be finished on their exterior with a plaster of any type in this section to provide protection from weather <u>receive a weather protective exterior finish</u> in accordance with this code Section 2109.2.4.8.</p> <p>2109.2.4.8.2 Vapor retarders and vapor permeance. Class I and II vapor retarders shall not be used on any adobe masonry wall, nor shall any other material be used that has a vapor permeance rating of less than 5 perms. <u>Plaster and finish assemblies shall have a vapor permeance of not less than 5 perms.</u></p> <p>Exception: <u>Insulation products applied to the exterior of stabilized adobe masonry walls in Climate Zones 2B, 3B, 4B and 5B shall have no vapor permeance requirement.</u></p> <p>2109.2.4.8.3 Plaster thickness and coats. Plaster applied to adobe masonry shall be not less than 7/8" (22 mm) and not greater than 2 inches (51 mm) thick. Plaster shall be applied in not less than two coats.</p> <p>2109.2.4.8.4 Plaster application. <u>Plaster shall be Where plaster is applied directly to adobe masonry walls, no intermediate membrane shall be used. any type of membrane to facilitate transpiration of moisture from the masonry units, and to secure a mechanical bond between the masonry and plaster.</u></p> <p>2109.2.4.8.5 Lath for plaster. Lath shall be provided for all plasters, except as otherwise <u>where not required elsewhere in this section Section 2019.2.4.8.</u> Fasteners shall be <u>corrosion resistant and spaced at a maximum of 16 inches (406mm) on center maximum with a minimum 1-1/2 inches (38 mm) penetration into the adobe wall.</u> Metal lath shall comply with ASTM C1063, as modified by this section, and shall be corrosion resistant. Plastic lath shall comply with ASTM C1788, as modified by this section. <u>Wood substrates shall be protected with #15 asphalt felt, an approved wood preservative or other protective coating prior to lath application.</u></p>		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
	2109.2.4.8.6 Cement plaster. Cement plaster shall conform to ASTM C926 and shall comply with Chapter 25, except that the proportion of lime in plaster coats shall not be less than 1 part lime to 64 parts cement to allow a minimum acceptable vapor permeability. The combined thickness of cement plaster coats shall not be more than exceed 1 inch (25mm).					
S157-19	2109.2.4.8.1 Conditions where lathing is not required. For unstabilized adobe walls finished with clay lime plaster, lathing shall be allowed to be omitted at the discretion of the Building Official when evidence of adequate mechanical bonding is demonstrated to and approved by the building official. 2109.2.4.8.2 2109.2.4.8.7 Lime Plaster. Lime plaster is any plaster with a binder composed of calcium hydroxide, (CaOH) including Type N or S hydrated lime, hydraulic lime, natural hydraulic lime, or slaked quicklime. Hydrated lime shall comply with ASTM C206. Hydraulic lime shall comply with ASTM C1707. Natural hydraulic lime shall comply with ASTM C141 and EN 459. Quicklime shall comply with ASTM C5.		X			Clarification
S158-19	2109.2.4.8 Exterior finish. <i>Exterior walls</i> constructed of unstabilized adobe units shall have their exterior surface covered with not fewer than two coats of Portland cement plaster having a minimum thickness of 3/4 inch (19.1 mm) and conforming to ASTM C926. Lathing shall comply with ASTM C1063. Fasteners shall be spaced at 16 inches (406 mm) on center maximum. Exposed wood surfaces shall be treated with an <i>approved</i> wood preservative or other protective coating prior to lath application. <u>2109.2.4.8.1 Cement-lime plaster. Cement-lime plaster shall be any plaster mix type CL, F or FL, as described in ASTM C926.</u>		X			Adds cement-lime for adobe walls and removes ambiguities
S159-19	2109.2.4.8.1 2109.2.4.8.9 Clay Plaster. Clay plaster shall comply with this section. 2109.2.4.8.2 2109.2.4.8.9.1 General. Clay plaster shall be any plaster having a clay or clay subsoil binder. Such plaster shall contain sufficient clay to fully bind the sand, fine aggregate or other granular material, and shall be permitted to contain reinforcing fibers. Acceptable reinforcing fibers include chopped straw, sisal, and animal hair. 2109.2.4.8.3 2109.2.4.8.9.2 Clay subsoil requirements. The suitability of clay subsoil shall be determined in accordance with the Figure 2 Ribbon Test and the Figure 3 Ball Test in the appendix of ASTM E2392/E2392M.	X			Minimal	Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>2109.2.4.8.4 2109.2.4.8.9.3 Weather exposed locations. Clay plaster exposed to water from direct or wind-driven rain, or snow, or irrigation spray shall be finished with an <u>clay-lime plaster, lime plaster, or other approved erosion-resistant finish.</u> The use of clay plasters shall not be permitted on weather exposed parapets.</p> <p>2109.2.4.8.5 2109.2.4.8.9.4 Prohibited finish coat. Plaster containing Portland cement shall not be permitted as a finish over clay plaster.</p> <p>2109.2.4.8.6 2109.2.4.8.9.5 Conditions where lathing is not required. For unstabilized adobe walls finished with unstabilized clay plaster, lathing shall not be required.</p>					
S160-19	<p>2205.2.1.1 Seismic Design Category B or C. Structures assigned to <i>Seismic Design Category B</i> or <i>C</i> shall be of any construction permitted in Section 2205. Where a response modification coefficient, <i>R</i>, in accordance with ASCE 7, Table 12.2-1, is used for the design of structures assigned to <i>Seismic Design Category B</i> or <i>C</i>, the structures shall be designed and detailed in accordance with the requirements of AISC 341. <u>Beam-to-column moment connections in special moment frames and intermediate moment frames shall be prequalified in accordance with AISC 341 Section K1, qualified by testing in accordance with AISC 341 Section K2, or shall be prequalified in accordance with AISC 358.</u></p> <p>Exception: The response modification coefficient, <i>R</i>, designated for “Steel systems not specifically detailed for seismic resistance, excluding cantilever column systems” in ASCE 7, Table 12.2-1, shall be permitted for systems designed and detailed in accordance with AISC 360, and need not be designed and detailed in accordance with AISC 341.</p> <p>2205.2.1.2 Seismic Design Category D, E or F. Structures assigned to <i>Seismic Design Category D</i>, <i>E</i> or <i>F</i> shall be designed and detailed in accordance with AISC 341, except as permitted in ASCE 7, Table 15.4-1. <u>Beam-to-column moment connections in special moment frames and intermediate moment frames shall be prequalified in accordance with AISC 341 Section K1, qualified by testing in accordance with AISC 341 Section K2, or shall be prequalified in accordance with AISC 358.</u></p>		X		Provides updates to the latest prequalified connections.	
S161-19	<p>[BS] STORAGE RACKS, STEEL. Cold-formed or hot-rolled steel structural members which are formed into steel storage racks, including pallet storage racks, movable-shelf racks, rack-supported systems, automated storage and retrieval systems (stacker racks),</p>		X		Clarifies what requirements apply to steel storage racks	

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
	<p>push-back racks, pallet-flow racks, case-flow racks, pick modules and rack-supported platforms. Other types of racks, such as drive-in or drive-through racks, cantilever racks, portable racks or racks made of materials other than steel, are not considered storage racks for the purpose of this code.</p> <p>[BS] STORAGE RACKS, STEEL CANTILEVERED. <u>A framework or assemblage composed of cold-formed or hot-rolled steel structural members, primarily in the form of vertical columns, extended bases, horizontal arms projecting from the faces of the columns, and longitudinal (down-aisle) bracing between columns. There may be shelf beams between the arms, depending on the products being stored; this definition does not include other types of racks such as pallet storage racks, drive-in racks, drive-through racks, or racks made of materials other than steel.</u></p> <p>Revise as follows:</p> <p>2209.1 Storage Steel storage racks. The design, testing and utilization of <u>steel storage racks</u> made of cold-formed or hot-rolled steel structural members shall be in accordance with RMI ANSI/MH 16.1. Where required by ASCE 7, the seismic design of <u>steel storage racks</u> shall be in accordance with Section 15.5.3 of ASCE 7.</p> <p>2209.2 Cantilevered steel Steel cantilevered storage racks. The design, testing, and utilization of <u>steel cantilevered storage racks</u> made of cold-formed or hot-rolled steel structural members shall be in accordance with RMI ANSI/MH 16.3. Where required by ASCE 7, the seismic design of <u>steel cantilevered storage racks</u> steel shall be in accordance with Section 15.5.3 of ASCE 7.</p> <p>1705.12.7 Storage racks. <i>Periodic special inspection</i> is required for the anchorage of <u>steel storage racks</u> and <u>steel cantilevered storage racks</u> that are 8 feet (2438 mm) or greater in height in structures assigned to <i>Seismic Design Category D, E or F</i>.</p>					
S166-19	<p>2303.2 Fire-retardant-treated wood. <i>Fire-retardant-treated wood</i> is any wood product that, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E84 or UL 723, a <i>listed</i> flame spread index of 25 or less. Additionally, the ASTM E84 or UL 723 test shall be continued for an additional 20-minute period and the flame front shall not progress more than 10¹/₂ feet (3200 mm) beyond the centerline of the burners at any time during the extended 30-minute test.</p>		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:						
S167-19	2303.2.3 Fire Testing Of Wood Structural Panels. Wood structural panels shall be tested with a ripped or cut longitudinal gap of 1/8" (3.2 mm).		X			Clarification
S168-19	<p>PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT (PITMR). Restraint that is used to prevent local buckling of an individual truss chord or web member because of the axial forces in the individual truss member.</p> <p>PERMANENT INDIVIDUAL TRUSS MEMBER DIAGONAL BRACING (PITMDB). Structural member or assembly intended to permanently stabilize the PITMR's.</p> <p>INDIVIDUAL TRUSS MEMBER. A truss chord or truss web.</p> <p>2303.4.1.1 Truss design drawings. The written, graphic and pictorial depiction of each individual truss shall be provided to the <i>building official</i> for approval prior to installation. Truss design drawings shall be provided with the shipment of trusses delivered to the job site. Truss design drawings shall include, at a minimum, the following information:</p> <ol style="list-style-type: none"> 1. Slope or depth, span and spacing. 2. Location of all joints and support locations. 3. Number of plies if greater than one. 4. Required bearing widths. 5. Design loads as applicable, including: <ol style="list-style-type: none"> 5.1. Top chord live load. 5.2. Top chord dead load. 5.3. Bottom chord live load. 5.4. Bottom chord dead load. 5.5. Additional loads and locations. 5.6. Environmental design criteria and loads (such as wind, rain, snow, seismic). 6. Other lateral loads, including drag strut loads. 7. Adjustments to wood member and metal connector plate design value for conditions of use. 8. Maximum reaction force and direction, including maximum uplift reaction forces where applicable. 9. Joint connection type and description, such as size and thickness or gage, and the dimensioned location of each joint connector except where symmetrically located relative to the joint interface. 10. Size, species and grade for each wood member. 11. Truss-to-truss connections and truss field assembly 		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
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Sub Code:						
	<p>requirements.</p> <p>12. Calculated span-to-deflection ratio and maximum vertical and horizontal deflection for live and total load as applicable.</p> <p>13. Maximum axial tension and compression forces in the truss members.</p> <p>14. Required permanent individual truss member restraint location and the method and details of restraint and diagonal bracing to be used in accordance with Section 2303.4.1.2.</p> <p>2303.4.1.2 Permanent individual truss member restraint (PITMR) and permanent individual truss member diagonal bracing (PITMDB). Where permanent restraint of truss members is required on the truss design drawings designate the need for <i>permanent individual truss member restraint</i>, it shall be accomplished by one of the following methods:</p> <p>1. Permanent individual truss member restraint/bracing shall be PITMR and PITMDB installed using standard industry lateral restraint and diagonal bracing details in accordance with generally TPI 1 section 2.3.3.1.1, accepted engineering practice, or Figures 2303.4.1.2(1a), (2a), and (3). Locations for lateral restraint shall be identified on the truss design drawing.</p> <p>2. <i>Individual truss member</i> reinforcement in place of the specified lateral restraints (i.e., buckling reinforcement such as T-reinforcement, L-reinforcement, proprietary reinforcement, etc.) such 2.The trusses shall be designed so that the buckling of any <i>individual truss member</i> is resisted internally by the individual truss through suitable means (for example, buckling reinforcement by T-reinforcement or L-reinforcement, proprietary reinforcement); <u>truss</u>. The buckling reinforcement of <i>individual truss members</i> of the trusses shall be installed as shown on the truss design drawing or on supplemental truss member buckling reinforcement details provided by the truss designer or in accordance with Figures 2303.4.1.2 (1b) and (2b).</p> <p>3. A project-specific permanent individual truss member restraint/bracing design shall be permitted to be specified <u>PITMR and PITMDB design provided by any registered design professional.</u></p>					

2303.4.1.2.1 Trusses installed without a diaphragm Trusses installed without a diaphragm on the top or bottom chord shall require a project specific PITMR and PITMDB design prepared by a registered design professional.

Exception: Group U occupancies.

2303.4.1.3 Trusses spanning 60 feet or greater. The owner or the owner's authorized agent shall contract with any qualified registered design professional for the design of the temporary installation restraint and diagonal bracing and the permanent individual truss member restraint/bracing PITMR and PITMDB for all trusses with clear spans 60 feet (18 288 mm) or greater.

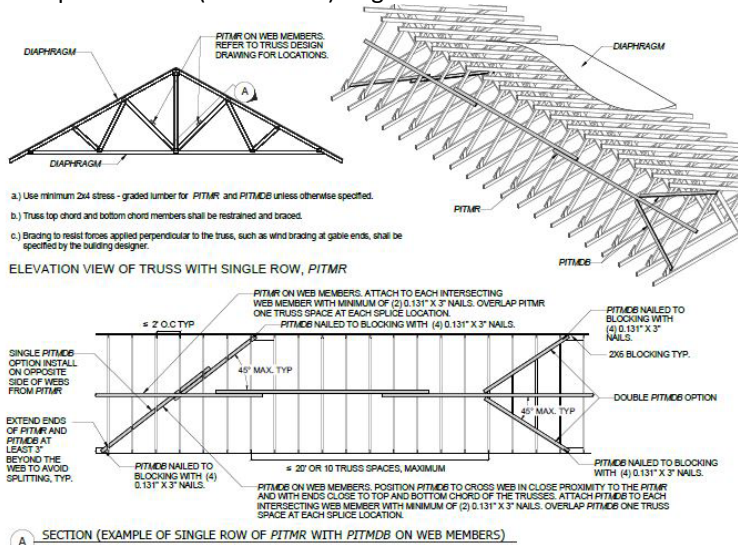
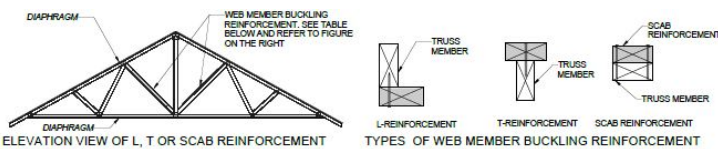


FIGURE 2303.4.1.2.(1a)

PITMR AND PITMDB FOR TRUSS WEB MEMBERS REQUIRING ONE ROW OF PITMR



- a) Truss top chord and bottom chord members shall be restrained and braced.
 b) Bracing to resist forces applied perpendicular to the truss, such as wind bracing at gable ends, shall be specified by the building designer.
 c) Use the table below unless project specific web member reinforcement is provided on the truss design drawing or supplemental truss buckling reinforcement details are provided by the truss designer.

NUMBER OF ROWS OF PITMR SPECIFIED ON WEB MEMBER	SIZE OF TRUSS WEB	TYPE AND SIZE OF WEB REINFORCEMENT ¹ FOR T, L OR SCAB ²	GRADE OF WEB REINFORCEMENT	MINIMUM LENGTH OF WEB REINFORCEMENT	MINIMUM CONNECTION OF WEB REINFORCEMENT TO WEB
ONE	2x4	2x4	Same species and grade or better than web member	90% of web or extend to within 6" of end of web member, whichever is greater	(0.131" x 3") nails at 6" on-center ²
	2x6	2x6			
	2x8	2x8			

¹Maximum allowable web length is 14'
²Attach Scab reinforcement to web with two rows of minimum 0.131" x 3" nails at 6" on-center

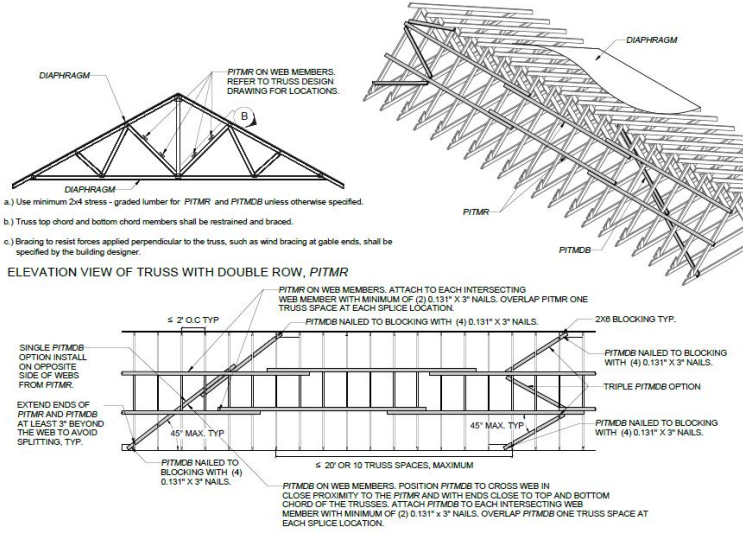
FIGURE 2303.4.1.2.(1b)

ALTERNATIVE INSTALLATION USING BUCKLING REINFORCEMENT FOR TRUSS WEB MEMBERS IN LIEU OF ONE ROW OF PITMR

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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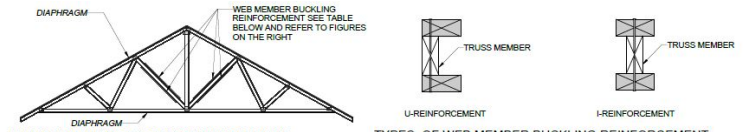
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SECTION (EXAMPLE OF DOUBLE ROW OF PITMR WITH PITMDB ON WEB MEMBERS)

FIGURE 2303.4.1.2.(2a)

PITMR AND PITMDB FOR TRUSS WEB MEMBERS REQUIRING TWO ROWS OF PITMR



ELEVATION VIEW OF I OR U REINFORCEMENT
 a.) Truss top chord and bottom chord members shall be restrained and braced.
 b.) Bracing to resist forces applied perpendicular to the truss, such as wind bracing at gable ends, shall be specified by the building designer.
 c.) Use the table below unless project specific web member reinforcement is provided on the truss design drawing or supplemental truss buckling reinforcement details are provided by the truss designer.

NUMBER OF ROWS OF PITMR SPECIFIED ON WEB MEMBER	SIZE OF TRUSS WEB	TYPE AND SIZE OF WEB REINFORCEMENT*	GRADE OF WEB REINFORCEMENT	MINIMUM LENGTH OF WEB REINFORCEMENT	MINIMUM CONNECTION OF WEB REINFORCEMENT TO WEB
TWO	2x4	(2) -2x4	Same species and grade or better than web member	90% of web or extend to within 6" of end of web member, whichever is greater	(0.131" x 3") nails at 6" on-center
	2x6	(2) -2x6			
	2x8	(2) -2x8			

*Maximum allowable web length is 14'

FIGURE 2303.4.1.2.(2b)

ALTERNATIVE INSTALLATION USING BUCKLING REINFORCEMENT FOR TRUSS WEB MEMBERS IN LIEU OF TWO ROWS OF PITMR

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	<p>PITMR INSTALLED ON TOP CHORD OF SUPPORTING TRUSSES. REFER TO TRUSS DESIGN DRAWINGS FOR SPACING AND LOCATION. ATTACH TO EACH TOP CHORD WITH MINIMUM (2) 0.131" X 3" NAILS. LAP PITMR AT LEAST ONE TRUSS SPACE AT EACH SPURCE LOCATION.</p> <p>PITMDB INSTALLED ON BOTTOM EDGE OF TOP CHORD OF THE SUPPORTING TRUSSES. ATTACH TO EACH TOP CHORD WITH MINIMUM (2) 0.131" X 3" NAILS. REPEAT PITMDB AT 10' OR 5' TRUSS SPACES MAXIMUM.</p> <p>EXTEND ENDS OF PITMR AND PITMDB AT LEAST 3" BEYOND THE TOP CHORD TO AVOID SPLITTING, TYP.</p> <p>DIAPHRAGM</p> <p>LAP PITMDB AT LEAST ONE TRUSS SPACE AT EACH SPURCE LOCATION.</p> <p>PLAN VIEW</p> <p>a.) Use minimum 2x4 stress - graded lumber for PITMR and PITMDB unless otherwise specified. b.) Web PITMR and PITMDB not shown for clarity. c.) Truss top chord and bottom chord members shall be restrained and braced. d.) Bracing to resist forces applied perpendicular to the truss, such as wind bracing at gable ends, shall be specified by the building designer.</p> <p>SECTION AT A</p> <p style="text-align: center;">FIGURE 2303.4.1.2 (3) PITMR AND PITMDB FOR FLAT PORTION OF TOP CHORD IN A PIGGYBACK ASSEMBLY</p>					
S169-19	2303.7 Shrinkage. Consideration shall be given in design to for the possible effect effects of wood cross-grain dimensional changes considered vertically that may occur in lumber fabricated in a green condition as a result of changes in the wood moisture content after installation.		X			Clarification
S170-19	2304.10.1 Connection fire resistance rating. Fire resistance ratings for connections in Type IV-A, IV-B, or IV-C construction shall be determined by one of the following: 1. Testing in accordance with Section 703.2 where the connection is part of the fire resistance test.		X			Necessary addition for clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact						
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	<p><u>2. Engineering analysis that demonstrates that the temperature rise at any portion of the connection is limited to an average temperature rise of 250°F (139°C), and a maximum temperature rise of 325°F (181°C), for a time corresponding to the required fire resistance rating of the structural element being connected. For the purposes of this analysis, the connection includes connectors, fasteners, and portions of wood members included in the structural design of the connection.</u></p>					
S172-19	<p>2304.9 Lumber decking. Lumber decking shall be designed and installed in accordance with the general provisions of this code and Sections 2304.9.1 through 2304.9.5.3. <u>Other lumber decking patterns and connection designs shall be substantiated through engineering analysis.</u></p> <p>2304.9.1 General. Each piece of lumber decking shall be square-end trimmed. Where random lengths are furnished, each piece shall be square end trimmed across the face so that not less than 90 percent of the pieces are within 0.5 degrees (0.00873 rad) of square. The ends of the pieces shall be permitted to be beveled up to 2 degrees (0.0349 rad) from the vertical with the exposed face of the piece slightly longer than the opposite face of the piece. Tongue-and-groove decking shall be installed with the tongues up on sloped or pitched roofs with pattern faces down.</p> <p>2304.9.2 Layup patterns. Lumber decking is permitted to be laid up following one of five standard patterns as defined in Sections 2304.9.2.1 through 2304.9.2.5. Other patterns are permitted to be used provided that they are substantiated through engineering analysis.</p>		X		Clarification	
S173-19	<p style="text-align: center;">TABLE 2304.10.1 FASTENING SCHEDULE</p> <p>a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.</p> <p>b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).</p> <p>c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the</p>			X	Minimal	Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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	<p>number of toenails in the rafter shall be permitted to be reduced by one nail.</p> <p>d. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.</p> <p>e. Tabulated fastener requirements apply where the ultimate design wind speed is less than 140 mph. For wood structural panel roof sheathing attached to gable end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 4 inches on center where the ultimate design wind speed is greater than 130 mph in Exposure B or greater than 110 mph in Exposure C. <u>Spacing exceeding 6 inches on center at intermediate supports shall be permitted where the fastening is designed per the AWC NDS.</u></p> <p>f. <u>Fastening is only permitted where</u> Where the ultimate design wind speed is less than or equal to 110 mph, roof sheathing attachment using the specified fasteners shall be installed 3 inches on center at all supports.</p>					
S174-19	<p style="text-align: center;">TABLE 2304.10.1 FASTENING SCHEDULE</p> <p>a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particleboard diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.</p> <p>b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).</p> <p>c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.</p> <p>d. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.</p> <p>e. Nails and staples are carbon steel meeting the specifications of ASTM F1667. <u>Connections using nails and staples of other materials, such as stainless steel, shall be designed by acceptable engineering practice or approved under Section 104.11.</u></p>		X			Clarification

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S175-19	<p>2304.12.1 Locations requiring waterborne preservatives or naturally durable wood. Wood used above ground in the locations specified in Sections 2304.12.1.1 through 2304.12.1.5, 2304.12.3 and 2304.12.5 shall be naturally durable wood or <i>preservative-treated wood</i> using waterborne preservatives, in accordance with AWPA U1 for above-ground use.</p> <p>2304.12.1.1 Joists, girders and subfloor. Wood joists or wood structural floors that are closer than 18 inches (457 mm) or wood girders that are closer than 12 inches (305 mm) to the exposed ground in crawl spaces or unexcavated areas located within the perimeter of the building foundation shall be of naturally durable or <i>preservative-treated wood</i>.</p> <p>2304.12.1.2 Wood supported by exterior foundation walls. Wood framing members, including wood sheathing, that are in contact with exterior foundation walls and are less than 8 inches (203 mm) from exposed earth shall be of naturally durable or <i>preservative-treated wood</i>.</p> <p>2304.12.1.3 Exterior walls below grade. Wood framing members and furring strips in direct contact with the interior of exterior masonry or concrete walls below grade shall be of naturally durable or <i>preservative-treated wood</i>.</p> <p>2304.12.1.4 Sleepers and sills. Sleepers and sills on a concrete or masonry slab that is in direct contact with earth shall be of naturally durable or <i>preservative-treated wood</i>.</p> <p>2304.12.1.5 Wood siding. Clearance between wood siding and earth on the exterior of a building shall be not less than 6 inches (152 mm) or less than 2 inches (51 mm) vertical from concrete steps, porch slabs, patio slabs and similar horizontal surfaces exposed to the weather except where siding, sheathing and wall framing are of naturally durable or <i>preservative-treated wood</i>.</p>		X			Clarification

	<p>2304.12.2 Other locations. Wood used in the locations specified in Sections 2304.12.2.1 through 2304.12.2.5 shall be naturally durable wood or <i>preservative-treated</i> wood in accordance with AWP A U1. <i>Preservative-treated</i> wood used in interior locations shall be protected with two coats of urethane, shellac, latex epoxy or varnish unless waterborne preservatives are used. Prior to application of the protective finish, the wood shall be dried in accordance with the manufacturer’s recommendations.</p> <p>2304.12.2.1 Girder ends. The ends of wood girders entering exterior masonry or concrete walls shall be provided with a 1/2-inch (12.7 mm) airspace on top, sides and end, unless naturally durable or <i>preservative-treated wood</i> is used.</p> <p>2304.12.2.2 Posts or columns. Posts or columns supporting permanent structures and supported by a concrete or masonry slab or footing that is in direct contact with the earth shall be of naturally durable or <i>preservative-treated wood</i>.</p> <p>Exception: Posts or columns that meet all of the following:</p> <ol style="list-style-type: none"> 1. Are not exposed to the weather, or are protected by a roof, eave, overhang, or other covering if exposed to the weather. 2. Are supported by concrete piers or metal pedestals projected not less than 1 inch (25 mm) above the slab or deck and are separated from the concrete pier by an impervious moisture barrier. 3. Are located not less than 8 inches (203 mm) above exposed earth. <p>2304.12.2.3 Supporting member for permanent appurtenances. Naturally durable or <i>preservative-treated wood</i> shall be utilized for those portions of wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances where such members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering to prevent moisture or water accumulation on the surface or at joints between members.</p> <p>Exception: Buildings located in a geographical region where experience has demonstrated that climatic conditions preclude the need to use durable materials where the structure is exposed to the weather.</p> <p>2304.12.2.4 Laminated timbers. The portions of glued-laminated timbers that form the structural supports of a building or other structure and are exposed to weather and not fully protected from moisture by a roof, eave or similar covering shall be pressure treated with preservative or be manufactured from naturally durable or <i>preservative-treated wood</i>.</p> <p>2304.12.2.5 Supporting members for permeable floors and roofs. Wood structural members that support moisture-permeable floors</p>					
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		Decrease	None	Increase		
Sub Code:						
	<p>or roofs that are exposed to the weather, such as concrete or masonry slabs, shall be of naturally durable or <i>preservative-treated wood</i> unless separated from such floors or roofs by an impervious moisture barrier. The impervious moisture barrier system protecting the structure supporting floors shall provide positive drainage of water that infiltrates the moisture-permeable floor topping.</p> <p>2304.12.2.6 Ventilation beneath balcony or elevated walking surfaces. Enclosed framing in exterior balconies and elevated walking surfaces that are exposed to rain, snow or drainage from irrigation shall be provided with openings that provide a net free cross-ventilation area not less than $1/150$ of the area of each separate space.</p> <p>2304.12.3 Wood in contact with the ground or fresh water. Wood used in contact with exposed earth shall be naturally durable for both decay and termite resistance or preservative treated in accordance with AWPA U1 for soil or fresh water use.</p> <p>Exception: Untreated wood is permitted where such wood is continuously and entirely below the ground-water level or submerged in fresh water.</p> <p>2304.12.3.1 Posts or columns. Posts and columns that are supporting permanent structures and embedded in concrete that is exposed to the weather or in direct contact with the earth shall be of <i>preservative-treated wood</i>.</p> <p>2304.12.4 Termite protection. In geographical areas where hazard of termite damage is known to be very heavy, wood floor framing in the locations specified in Section 2304.12.1.1 and exposed framing of exterior decks or balconies shall be of naturally durable species (termite resistant) or preservative treated in accordance with AWPA U1 for the species, product preservative and end use or provided with <i>approved</i> methods of termite protection.</p> <p>2304.12.5 Wood used in retaining walls and cribs. Wood installed in retaining or crib walls shall be preservative treated in accordance with AWPA U1 for soil and fresh water use.</p>					

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
S176-19	<p>2304.12.2.3 Supporting member for permanent appurtenances. Naturally durable or <i>preservative-treated wood</i> shall be utilized for those portions of wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances where such members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering to prevent moisture or water accumulation on the surface or at joints between members.</p> <p>Exception: Buildings Sawn lumber in buildings located in a geographical region where experience has demonstrated that climatic conditions preclude the need to use durable materials where the structure is exposed to the weather.</p> <p>2304.12.2.4 Laminated timbers. The portions of glued laminated timbers that form the structural supports of a building or other structure and are exposed to weather and not fully protected from moisture by a roof, eave or similar covering shall be pressure treated with preservative or be manufactured from naturally durable or preservative-treated wood.</p>		X			Clarification
S177-19	<p>2304.12.2 Other locations. Wood used in the locations specified in Sections 2304.12.2.1 through 2304.12.2.5 2304.12.2.9 shall be naturally durable wood or <i>preservative-treated wood</i> in accordance with AWP A U1. <i>Preservative-treated wood</i> used in interior locations shall be protected with two coats of urethane, shellac, latex epoxy or varnish unless waterborne preservatives are used. Prior to application of the protective finish, the wood shall be dried in accordance with the manufacturer's recommendations.</p> <p>2304.12.2.1 Girder ends. The ends of wood girders entering exterior masonry or concrete walls shall be provided with a 1/2-inch (12.7 mm) airspace on top, sides and end, unless naturally durable or <i>preservative-treated wood</i> is used.</p> <p>2304.12.2.2 Posts or columns. Posts or columns supporting permanent structures and supported by a concrete or masonry slab or footing that is in direct contact with the earth shall be of naturally durable or <i>preservative-treated wood</i>.</p> <p>Exception: Posts or columns that meet all of the following:</p> <ol style="list-style-type: none"> 1. Are not exposed to the weather, or are protected by a roof, eave, overhang, or other covering if exposed to the weather. 2. Are supported by concrete piers or metal pedestals 		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>projected not less than 1 inch (25 mm) above the slab or deck and are separated from the concrete pier by an impervious moisture barrier.</p> <p>3. Are located not less than 8 inches (203 mm) above exposed earth.</p> <p>2304.12.2.3 Supporting member for permanent appurtenances. Naturally durable or <i>preservative-treated wood</i> shall be utilized for those portions of wood members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances where such members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering to prevent moisture or water accumulation on the surface or at joints between members.</p> <p>Exception: Buildings located in a geographical region where experience has demonstrated that climatic conditions preclude the need to use durable materials where the structure is exposed to the weather.</p> <p>2304.12.2.4 Laminated timbers. The portions of glued-laminated timbers that form the structural supports of a building or other structure and are exposed to weather and not fully protected from moisture by a roof, eave or similar covering shall be pressure treated with preservative or be manufactured from naturally durable or <i>preservative-treated wood</i>.</p> <p>2304.12.2.5 Supporting members for permeable floors and roofs. Wood structural members that support moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, shall be of naturally durable or <i>preservative-treated wood</i> unless separated from such floors or roofs by an impervious moisture barrier. The impervious moisture barrier system protecting the structure supporting floors shall provide positive drainage of water that infiltrates the moisture-permeable floor topping.</p> <p>2304.12.2.6 Ventilation beneath balcony or elevated walking surfaces. Enclosed framing in exterior balconies and elevated walking surfaces that are exposed to rain, snow or drainage from irrigation shall be provided with openings that provide a net free cross-ventilation area not less than $1/150$ of the area of each separate space.</p>					

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CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE								
		Decrease	None	Increase										
Sub Code:														
	<p>2304.12.3 2304.12.2.7 Wood in contact with the ground or fresh water. Wood used in contact with exposed earth shall be naturally durable for both decay and termite resistance or preservative treated in accordance with AWPA U1 for soil or fresh water use.</p> <p>Exception: Untreated wood is permitted where such wood is continuously and entirely below the ground-water level or submerged in fresh water.</p> <p>2304.12.3.1 2304.12.2.7.1 Posts or columns. Posts and columns that are supporting permanent structures and embedded in concrete that is exposed to the weather or in direct contact with the earth shall be of <i>preservative-treated wood</i>.</p> <p>2304.12.4 2304.12.2.8 Termite protection. In geographical areas where hazard of termite damage is known to be very heavy, wood floor framing in the locations specified in Section 2304.12.1.1 and exposed framing of exterior decks or balconies shall be of naturally durable species (termite resistant) or preservative treated in accordance with AWPA U1 for the species, product preservative and end use or provided with <i>approved</i> methods of termite protection.</p> <p>2304.12.5 2304.12.2.9 Wood used in retaining walls and cribs. Wood installed in retaining or crib walls shall be preservative treated in accordance with AWPA U1 for soil and fresh water use.</p> <p>2304.12.6 2304.12.3 Attic ventilation. For <i>attic</i> ventilation, see Section 1202.2.2.</p> <p>2304.12.7 2304.12.4 Under-floor ventilation (crawl space). For under-floor ventilation (crawl space), see Section 1202.4.</p>													
S178-19	<p>2304.12.2.6 Ventilation beneath balcony or elevated walking surfaces. Enclosed framing in exterior balconies and elevated walking surfaces that are exposed to rain, snow or drainage from irrigation <u>have weather-exposed surfaces</u> shall be provided with openings that provide a net free cross-ventilation area not less than $\frac{1}{150}$ of the area of each separate space.</p>		X			Clarification								
S180-19	<p style="text-align: center;">TABLE 2306.1.4 ALLOWABLE LOADS FOR LUMBER DECKING</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">PATTERN</th> <th colspan="2">ALLOWABLE AREA LOAD^{a, b}</th> </tr> <tr> <th>Flexure</th> <th>Deflection</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	PATTERN	ALLOWABLE AREA LOAD ^{a, b}		Flexure	Deflection				X				Clarification
PATTERN	ALLOWABLE AREA LOAD ^{a, b}													
	Flexure	Deflection												

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY			IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
				Decrease	None	Increase		
Sub Code:								
	3-inch and 4-inch decking	$\sigma_b = \frac{8 \cancel{20} F_b' d^2}{3 \cancel{16}}$	$\sigma_\Delta = \frac{116 \Delta E' d^3}{l^4 12}$					
<p>For SI: 1 inch = 25.4 mm.</p> <p>a. σ_b = Allowable total uniform load limited by bending. σ_Δ = Allowable total uniform load limited by deflection. b. d = Actual decking thickness.</p> <p>l = Span of decking. F_b' = Allowable bending stress adjusted by applicable factors. E = Modulus of elasticity adjusted by applicable factors.</p>								
S181-19	<p>2306.1.4 Lumber decking. The capacity of lumber decking arranged according to the patterns described in Section 2304.9.2 shall be the lesser of the capacities determined for flexure moment and deflection according to the formulas in Table 2306.1.4.</p> <p style="text-align: center;">TABLE 2306.1.4 ALLOWABLE LOADS FOR LUMBER DECKING</p> <p>a. σ_w = Allowable total uniform load limited by bending moment. b. σ_w = Allowable total uniform load limited by deflection. d = Actual decking thickness. l = Span of decking. F_b' = Allowable bending stress adjusted by applicable factors. E = Modulus of elasticity adjusted by applicable factors.</p>				X			Clarification
S182-19	<p style="text-align: center;">TABLE 2306.3(3) ALLOWABLE SHEAR VALUES FOR WIND OR SEISMIC FORCES FOR SHEAR WALLS OF LATH AND PLASTER OR GYPSUM BOARD WOOD FRAMED WALL ASSEMBLIES UTILIZING STAPLES</p> <p>a. These shear walls shall not be used to resist loads imposed by masonry or concrete walls (see AWC SDPWS). Values shown are for short-term loading due to wind or seismic loading. Walls resisting seismic loads shall be subject to the limitations in Section 12.2.1 of ASCE 7. Values shown shall be reduced 25 percent for normal loading.</p> <p>b. Applies to fastening at studs, top and bottom plates and blocking.</p> <p>c. Except as noted, shear values are based on a maximum framing spacing of 16 inches on center.</p> <p>d. Maximum framing spacing of 24 inches on center.</p> <p>e. All edges are blocked, and edge fastening is provided at all supports and all panel edges.</p> <p>f. Staples shall have a minimum crown width of 7/16 inch, measured outside the legs, and shall be installed with their crowns parallel to the long dimension of the framing members.</p> <p>g. Staples for the attachment of gypsum lath and woven-wire lath shall have a minimum crown width of 3/4 inch, measured outside the legs.</p>				X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
S183-19 Part I	2308.5.6 Cripple walls. Foundation cripple walls shall be framed of studs that are not less than the size of the studding above and . <u>Exterior cripple wall studs shall be</u> not less than 14 inches (356 mm) in length, or shall be framed of solid blocking. Where exceeding 4 feet (1219 mm) in height, such walls shall be framed of studs having the size required for an additional <i>story</i> . See Section 2308.6.6 for cripple wall bracing.	X			Minimal	Clarification
S183-19 Part II	R602.9 Cripple walls. Foundation cripple walls shall be framed of studs not smaller than the studding above. Where exceeding 4 feet (1219 mm) in height, such walls shall be framed of studs having the size required for an additional <i>story</i> . Cripple <u>Exterior cripple walls with a stud height less than 14 inches (356 mm) shall be continuously sheathed on one side with wood structural panels fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking.</u> Cripple walls shall be supported on continuous foundations.	X			Minimal	Clarification
S184-19 Part I	2308.5.9 Cutting and notching. In exterior walls and bearing partitions, a wood studs are permitted to <u>stud shall not</u> be cut or notched to a depth not exceeding 25 percent of the width of the stud. Cutting or notching of studs to a depth not greater than 40 percent of the width of the stud is permitted in nonbearing partitions not supporting in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth. 2308.5.10 Bored holes. Bored holes not greater than <u>The diameter of bored holes in wood studs shall not exceed 40 percent of the stud width are permitted to be bored in any wood stud. Bored holes not greater than</u> depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud width are permitted in nonbearing partitions or depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each bored stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of a the bored hole shall not be nearer closer than 5/8 inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>[BS] 302.3.3 Stud cutting and notching. In exterior walls and bearing partitions, any a wood stud is permitted to <u>shall not</u> be cut or notched to a depth not exceeding in excess of 25 percent of its width. Cutting or notching of studs to a depth not greater than 40 percent of the width of the stud is permitted in nonload-bearing partitions supporting no loads other than the weight of the partition depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.</p> <p>[BS] C101.2 Stud cutting and notching. In exterior walls and bearing partitions, any a wood stud is permitted to <u>shall not</u> be cut or notched to a depth not exceeding in excess of 25 percent of its width. Cutting or notching of studs to a depth not greater than 40 percent of the width of the stud is permitted in nonbearing partitions supporting no depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.</p> <p>[BS] C101.3 Bored holes. The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall <u>be</u> not be closer than $\frac{5}{8}$ inch (15.9 mm) to the edge of the stud. Bored holes shall be not located at the same section of stud as a cut or notch.</p>					
S184-19 Part II	<p>R602.6 Drilling and notching of studs. Drilling and notching of studs shall be in accordance with the following:</p> <ol style="list-style-type: none"> 1. Notching. Any A stud in an exterior wall or bearing partition shall be permitted to <u>not</u> be cut or notched to a depth not exceeding 25 percent of its width. depth. Studs in nonbearing partitions shall be permitted to <u>not</u> be notched to a depth not to exceed exceeding 40 percent of a single stud width. depth. 2. Drilling. Any stud shall be permitted to be bored or drilled, provided that the diameter of the resulting hole is not more than 60 Boring. The diameter of bored holes in studs shall not exceed 60 percent of the stud width depth, the edge of the hole is <u>shall</u> not more be less than $\frac{5}{8}$ inch (16 mm) to from the edge of the stud, and the hole is <u>shall</u> not be located in the same section as a cut or notch. Studs Where the diameter of a bored hole in a stud located in exterior walls or bearing 		X			Clarification

Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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Sub Code:																		
	<p>partitions drilled is over 40 percent and up to 60 percent such stud shall be doubled with and not more than two successive doubled studs shall be so bored. See Figures R602.6(1) and R602.6(2).</p> <p>Exception: Use of Where approved stud shoes is permitted where they are installed in accordance with the manufacturer's recommendations. instructions.</p>																	
S185-19	<p>2308.6.6.2 Cripple wall bracing in Seismic Design Categories D and E. For the purposes of this section, cripple walls in <i>Seismic Design Categories</i> D and E having shall not have a stud height exceeding 14 inches (356 mm) shall be considered to be a story and , and studs shall be braced solid blocked in accordance with Table 2308.6.1. Where interior braced wall lines occur without a continuous foundation below, the length of parallel exterior cripple wall bracing shall be one and one half times the lengths required by Table 2308.6.1. Where the cripple wall sheathing type used is Method WSP or DWB and this additional length of bracing cannot be provided, the capacity of WSP or DWB sheathing shall be increased by reducing the spacing of fasteners along the perimeter of each piece of sheathing to 4 inches (102 mm) on center. Section 2308.5.6 for the full dwelling perimeter and for the full length of interior braced walls lines supported on foundations, excepting ventilation and access openings.</p>		X			Clarification												
S186-19	<p style="text-align: center;">TABLE 2308.6.3(1) BRACING METHODS</p> <p><i>Portions of table not shown remain unchanged.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">METHODS, MATERIAL</th> <th rowspan="2">MINIMUM THICKNESS</th> <th rowspan="2">FIGURE</th> <th colspan="2">CONNECTION CRITERIA*</th> </tr> <tr> <th>Fasteners</th> <th>Spacing</th> </tr> </thead> <tbody> <tr> <td>PCP Portland cement plaster</td> <td>Section 2510 to studs at maximum of 16" o.c.</td> <td style="text-align: center;"></td> <td>1 1/2" long, 11 gage, 0.120" dia., 7/16" dia. head nails or 7/8" long, 16 gage staples</td> <td>6" o.c. on all framing members</td> </tr> </tbody> </table> <p>For SI: 1 foot = 304.8 mm, 1 degree = 0.01745 rad. a. Method LIB shall have gypsum board fastened to one or more side(s) with nails or screws</p>	METHODS, MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA*		Fasteners	Spacing	PCP Portland cement plaster	Section 2510 to studs at maximum of 16" o.c.		1 1/2" long, 11 gage, 0.120" dia., 7/16" dia. head nails or 7/8" long, 16 gage staples	6" o.c. on all framing members		X			Clarification
METHODS, MATERIAL	MINIMUM THICKNESS				FIGURE	CONNECTION CRITERIA*												
		Fasteners	Spacing															
PCP Portland cement plaster	Section 2510 to studs at maximum of 16" o.c.		1 1/2" long, 11 gage, 0.120" dia., 7/16" dia. head nails or 7/8" long, 16 gage staples	6" o.c. on all framing members														
S187-19	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>H_C/H_R</th> <th>Heel Joint Connection Adjustment Factor</th> </tr> </thead> <tbody> <tr> <td>1/3</td> <td>1.5</td> </tr> <tr> <td>1/4</td> <td>1.33</td> </tr> <tr> <td>1/5</td> <td>1.25</td> </tr> <tr> <td>1/6</td> <td>1.2</td> </tr> <tr> <td>1/10 or less</td> <td>1.11</td> </tr> </tbody> </table> <p style="text-align: center;">TABLE 2308.7.3.1 RAFTER TIE CONNECTIONS</p> <p>a. 10d common (3" x 0.148") nails shall be permitted to be substituted for 16d common (3 1/2" x 0.162") nails where the required number of nails is taken as 1.2 times the required number of 16d common nails,</p>	H _C /H _R	Heel Joint Connection Adjustment Factor	1/3	1.5	1/4	1.33	1/5	1.25	1/6	1.2	1/10 or less	1.11		X			Clarification
H _C /H _R	Heel Joint Connection Adjustment Factor																	
1/3	1.5																	
1/4	1.33																	
1/5	1.25																	
1/6	1.2																	
1/10 or less	1.11																	

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	<p><u>rounded up to the next full nail.</u></p> <p>b. Rafter tie heel joint connections are not required where the ridge is supported by a load-bearing wall, header or ridge beam.</p> <p>c. Where intermediate support of the rafter is provided by vertical struts or purlins to a load-bearing wall, the tabulated heel joint connection requirements are permitted to be reduced proportionally to the reduction in span.</p> <p>d. Equivalent nailing patterns are required for ceiling joist to ceiling joist lap splices.</p> <p>e. Connected members shall be of sufficient size to prevent splitting due to nailing.</p> <p>f. For snow loads less than 30 pounds per square foot, the required number of nails is permitted to be reduced by multiplying by the ratio of actual snow load plus 10 divided by 40, but not less than the number required for no snow load.</p> <p>g. Applies to roof live load of 20 psf or less.</p> <p>h. Tabulated heel joint connection requirements assume that ceiling joists or rafter ties are located at the bottom of the attic space. Where ceiling joists or rafter ties are located higher in the attic, heel joint connection requirements shall be increased by the following factors:</p> <p>where: H_C = Height of ceiling joists or rafter ties measured vertically above <u>from the top of the rafter support walls to the bottom of the ceiling joists or rafter ties.</u> H_R = Height of roof ridge measured vertically above <u>from the top of the rafter support walls to the bottom of the roof ridge.</u> <u>When H_C / H_R exceeds 1/3, connections shall be designed in accordance with accepted engineering practice.</u></p> <p>i. Tabulated requirements are based on 10 psf roof dead load in combination with the specified roof snow load and roof live load.</p>					
S188-19	<p>2401.1 Scope. The provisions of this chapter shall govern the materials, design, construction and quality of glass, light-transmitting ceramic and light-transmitting plastic panels for exterior and interior use in both vertical and sloped applications in buildings and structures. <u>Light-transmitting plastic glazing shall also meet the applicable requirements of Chapter 26.</u></p>		X			Clarification
S189-19	<p>2403.3 Glass Framing. To be considered firmly supported, the framing members for each individual pane of glass shall be designed so that the deflection of the edge of the glass perpendicular to the glass pane does not exceed $1/175$ of the glass edge length where the glass edge length is not more than 13 feet 6 inches (4115 mm) or $1/240$ <u>of the glass edge length + 1/4 inch (6.4 mm)</u> where the glass edge length is greater than 13 feet 6 inches (4115 mm), when subjected to the larger of the positive or negative load where loads are combined as specified in Section 1605.</p>		X			Clarification

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Sub Code:						
S190-19	<p>2405.1 Scope. This section applies to the installation of glass and other transparent, translucent or opaque glazing material installed at a slope of more than 15 degrees (0.26 rad) from the vertical plane, including glazing materials in skylights, roofs and sloped walls.</p> <p>2405.2 Allowable glazing materials and limitations. Sloped glazing shall be any of the following materials, subject to the listed limitations.</p> <ol style="list-style-type: none"> 1. For monolithic glazing systems, the glazing material of the single light or layer shall be laminated glass with a minimum 30-mil (0.76 mm) polyvinyl butyral (or equivalent) interlayer, wired glass, light-transmitting plastic materials meeting the requirements of Section 2607, heat-strengthened glass or fully tempered glass. 2. For multiple-layer glazing systems, each light or layer shall consist of any of the glazing materials specified in Item 1. <p>Annealed glass is permitted to be used as specified in Exceptions 2 and 3 of Section 2405.3. <u>Laminated glass and plastic materials described above shall not require the screening or height restrictions provided in Section 2405.3.</u></p> <p>For additional requirements for plastic skylights, see Section 2610. Glass-block construction shall conform to the requirements of Section 2110.1.</p> <p>2405.3 Screening. Where used in monolithic glazing systems, <u>annealed, heat-strengthened, and fully tempered and wired glass</u> shall have <u>broken glass retention</u> screens installed below the glazing material. The screens and their fastenings shall be: capable of supporting twice the weight of the glazing; firmly and substantially fastened to the framing members; and installed within 4 inches (102 mm) of the glass. The screens shall be constructed of a noncombustible material not thinner than No. 12 B&S gage (0.0808 inch) with mesh not larger than 1 inch by 1 inch (25 mm by 25 mm). In a corrosive atmosphere, structurally equivalent noncorrosive screen materials shall be used. <u>Annealed, heat-strengthened glass, fully tempered glass and wired glass</u>, where used in multiple-layer glazing systems as the bottom glass layer over the walking surface, shall be equipped with screening that conforms to the requirements for monolithic glazing systems.</p>		X			Clarification

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		Decrease	None	Increase		
Sub Code:						
	<p>Exception: In monolithic and multiple-layer sloped glazing systems, the following applies:</p> <ol style="list-style-type: none"> 1. Fully tempered glass installed without protective screens where glazed between intervening floors at a slope of 30 degrees (0.52 rad) or less from the vertical plane shall have the highest point of the glass 10 feet (3048 mm) or less above the walking surface. 2. Screens are not required below any glazing material, including annealed glass, where the walking surface below the glazing material is permanently protected from the risk of falling glass or the area below the glazing material is not a walking surface. 3. Any glazing material, including annealed glass, is permitted to be installed without screens in the sloped glazing systems of commercial or detached noncombustible greenhouses used exclusively for growing plants and not open to the public, provided that the height of the greenhouse at the ridge does not exceed 30 feet (9144 mm) above grade. 4. Screens shall not be required in individual dwelling units in Groups R-2, R-3 and R-4 where fully tempered glass is used as single glazing or as both panes in an insulating glass unit, and the following conditions are met: <ol style="list-style-type: none"> 4.1. Each pane of the glass is 16 square feet (1.5 m²) or less in area. 4.2. The highest point of the glass is 12 feet (3658 mm) or less above any walking surface or other accessible area. 4.3. The glass thickness is 3/16 inch (4.8 mm) or less. 5. Screens shall not be required for laminated glass with a 15-mil (0.38 mm) polyvinyl butyral (or equivalent) interlayer used in individual dwelling units in Groups R-2, R-3 and R-4 within the following limits: <ol style="list-style-type: none"> 5.1. Each pane of glass is 16 square feet (1.5 m²) or less in area. 5.2. The highest point of the glass is 12 feet (3658 mm) or less above a walking surface or other accessible area. 					
S192-19	<p>2407.1.2 Guards with structural glass balusters panels. Guards with structural glass balusters, whether vertical posts, columns or panels, shall be installed with an attached top rail or handrail. The top rail or handrail shall be supported by not fewer than three glass balusters, or shall be otherwise supported to remain in place should one glass baluster fail.</p>		X			Clarification

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Table 10. 2021 IBC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IBC STRUCTURAL CHANGE SUMMARY	IBC STRUCTURAL COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Exception: An attached top rail or handrail is not required where the glass balusters <u>panels</u> are laminated glass with two or more glass plies of equal thickness and of the same glass type. The balusters shall be tested to remain in place as a barrier following impact or glass breakage in accordance with ASTM E2353.</p>					
S196-19	<p>2510.6.1 Dry climates. One of the following shall apply for dry (B) <i>climate zones</i>:</p> <ol style="list-style-type: none"> 1. The <i>water-resistive barrier</i> shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of <i>water-resistive barrier</i> complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane and any flashing, installed in accordance with Section 1404.4 and intended to drain to the <i>water-resistive barrier</i>, is directed between the layers. 2. The <i>water-resistive barrier</i> shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of <i>water-resistive barrier</i> complying with ASTM E2556, Type II. The water-resistive barrier shall be separated from the stucco by a layer of foam plastic insulating sheathing or other nonwater absorbing layer, <u>or a drainage space</u>. <p>2510.6.2 Moist or marine climates. In moist (A) or marine (C) <i>climate zones</i>, water-resistive barrier shall comply with of one of the following:</p> <ol style="list-style-type: none"> 1. In addition to complying with Item 1 or 2 of Section 2510.6.1, a <u>space or drainage material not less than minimum 3/16 inch (4.8 mm) in depth space</u> shall be <u>applied</u> added to the exterior side of the <i>water-resistive barrier</i>. 2. In addition to complying with Item 2 of Section 2510.6.1, <u>drainage on the exterior side of the water-resistive barrier shall have a space with</u> a minimum drainage efficiency of 90% as measured in accordance with ASTM E2273 or Annex A2 of ASTM E2925 is added to the exterior side of the water-resistive barrier. 			X	Minimal	Clarification

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APPENDIX K

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact						
CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB163-19	<p>R102.7.1 Additions, alterations or repairs. <i>Additions, alterations or repairs to any structure shall conform to the requirements for a new structure without requiring the existing structure to comply with the requirements of this code, unless otherwise stated. Additions, alterations, repairs and relocations shall not cause an existing structure to become unsafe or adversely affect the performance of the building. less compliant with the provisions of this code than the existing building or structure was prior to the addition, alteration or repair. An existing building together with its additions shall comply with the height limits of this code. Where the alteration causes the use or occupancy to be changed to one not within the scope of this code, the provisions of the International Existing Building Code shall apply.</i></p>		X			Clarification
RB164-19	<p>TABLE R403.1(1) MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOOTINGS FOR LIGHT-FRAME CONSTRUCTION (inches)^{a, b, c, d} <i>(No change to portions of tables or footnotes not shown)</i></p> <p>d. Where the building width perpendicular to the wall footing is less than 32 feet, a 2 inch decrease in footing width and 1 inch decrease in footing depth is permitted for every 4 feet of decrease in building width, <u>provided the minimum width is 12 inches (mm) and minimum depth is 6 inches (mm).</u></p> <p>TABLE R403.1(2) MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOOTINGS FOR LIGHT-FRAME CONSTRUCTION WITH BRICK VENEER OR LATH AND PLASTER (inches)^{a, b, c, d}</p> <p>d. Where the building width perpendicular to the wall footing is less than 32 feet, a 2 inch decrease in footing width and 1 inch decrease in footing depth is permitted for every 4 feet of decrease in building width, <u>provided the minimum width is 12 inches (mm) and minimum depth is 6 inches (mm).</u></p> <p>TABLE R403.1(3) MINIMUM WIDTH AND THICKNESS FOR CONCRETE FOOTINGS WITH CAST-IN-PLACE CONCRETE OR PARTIALLY GROUTED MASONRY WALL CONSTRUCTION (inches)^{a, b, c, d}</p> <p>d. Where the building width perpendicular to the wall footing is less than 32 feet, a 2 inch decrease in footing width and 1 inch decrease in footing depth is permitted for every 4 feet of decrease in building width, <u>provided the minimum width is 12 inches (mm) and minimum depth is 6 inches (mm).</u></p>			X	Minimal	Clarification

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB166-19	<p>R404.1.3.3.6 Form materials and form ties. Forms shall be made of wood, steel, aluminum, plastic, a composite of cement and foam insulation, a composite of cement and wood chips, or other <i>approved</i> material suitable for supporting and containing concrete. Forms shall be accurately positioned and secured before placing concrete and shall provide sufficient strength to contain concrete during the concrete placement operation.</p> <p>Form ties shall be steel, solid plastic, foam plastic, a composite of cement and wood chips, a composite of cement and foam plastic, or other suitable material capable of resisting the forces created by fluid pressure of fresh concrete.</p> <p>R403.1.6 Foundation anchorage. Wood sill plates and wood walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section.</p> <p>Cold-formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates in accordance with Section R505.3.1 or R603.3.1, as applicable. Wood sill plates supporting cold-formed steel framing shall be anchored to the foundation in accordance with this section.</p> <p>Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of <i>braced wall panels</i> at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with minimum 1/2-inch-diameter (12.7 mm) anchor bolts spaced not greater than 6 feet (1829 mm) on center or <i>approved</i> anchors or anchor straps spaced as required to provide equivalent anchorage to 1/2-inch-diameter (12.7 mm) anchor bolts. Bolts shall extend not less than 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. The bolts shall be located in the middle third of the width of the plate. A nut and washer shall be tightened on each anchor bolt. There shall be not fewer than two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundation that are not part of a <i>braced wall panel</i> shall be positively anchored with <i>approved</i> fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Sections R317 and R318. Anchor bolts shall be <u>permitted to be located after the while concrete is placed still plastic and before it has set in accordance with ACI 332. Where anchor bolts resist placement or the consolidation of concrete around anchor bolts is impeded, the concrete shall be vibrated to ensure full contact between the anchor bolts and concrete.</u></p>	X			Minimal	Clarification

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact						
CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>Exceptions:</p> <ol style="list-style-type: none"> 1. Walls 24 inches (610 mm) total length or shorter connecting offset braced wall panels shall be anchored to the foundation with not fewer than one anchor bolt located in the center third of the plate section and shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1). 2. Connection of walls 12 inches (305 mm) total length or shorter connecting offset <i>braced wall panels</i> to the foundation without anchor bolts shall be permitted. The wall shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1). 					
RB168-19	<p>To add some uniformity to the IRC Code, the following modification is proposed to the Table headers. Section R404.1 applies to foundation walls, which could be constructed with either masonry or concrete. Since the creation of the IRC, the masonry and concrete wall sections have been written and modified by different interest groups. In some instances there has been a lack of coordination between code provisions for the two materials. This is an attempt to bridge some of those differences so that the users of the IRC can see uniform language across the code.</p> <p>It is proposed that all affected Tables use the header "MAXIMUM UNSUPPORTED WALL HEIGHT" to describe these similar conditions.</p>		X		Consolidates terminology across tables regardless of the materials to make it clear that the intent is the same for all tables	
RB169-19	<p>R404.1.2.1 Masonry foundation walls. Concrete masonry and clay masonry foundation walls shall be constructed as set forth in Table R404.1.1(1), R404.1.1(2), R404.1.1(3) or R404.1.1(4) and shall comply with applicable provisions of Section R606. In buildings assigned to Seismic Design Categories D₀, D₁ and D₂, concrete masonry and clay masonry foundation walls shall also comply with Section R404.1.4.1. Rubble stone masonry foundation walls shall be constructed in accordance with Sections R404.1.8 and R606.4.2. <u>Rubble stone masonry walls shall not be used in Seismic Design Categories D₀, D₁ and D₂ or in townhouses in Seismic Design Category C.</u></p>		X		Clarification	
RB171-19	<p>R404.1.3.3.7.1 Steel reinforcement. Steel reinforcement shall comply with the requirements of ASTM A615, A706, or A996. ASTM A996 bars produced from rail steel shall be Type R. In buildings assigned to Seismic Design Category A, B or C, the minimum yield strength of reinforcing steel shall be 40,000 psi (Grade 40) (276 MPa). In buildings assigned to Seismic Design Category D₀, D₁ or D₂, reinforcing steel shall comply with the requirements of ASTM A706 for low alloy steel with a minimum yield strength of shall be 60,000 psi (Grade 60) (414 MPa).</p>	X		Minimal	Clarification	
RB173-19	<p>R406.2 Concrete and masonry foundation waterproofing. In areas where a high water table or other severe soil-water conditions are</p>		X		Clarification	

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>known to exist, exterior foundation walls that retain earth and enclose interior spaces and floors below <i>grade</i> shall be waterproofed from the higher of (a) the top of the footing or (b) 6 inches (152 mm) below the top of the basement floor, to the finished <i>grade</i>. Walls shall be waterproofed in accordance with one of the following:</p> <ol style="list-style-type: none"> 1. Two-ply hot-mopped felts. 2. Fifty-five-pound (25 kg) roll roofing. 3. Six mil (0.15 mm) polyvinyl chloride. 4. Six mil (0.15 mm) polyethylene 5. Forty mil (1 mm) polymer modified asphalt 6. Sixty-mil (1.5 mm) flexible polymer cement. 7. One-eighth-inch (3 mm) cement-based, fiber-reinforced, waterproof coating. 8. Sixty-mil (1.5 mm) solvent-free liquid-applied synthetic rubber. <p>All joints in membrane waterproofing shall be lapped and sealed with an adhesive compatible with the membrane.</p> <p>Exception: Organic-solvent-based products such as hydrocarbons, chlorinated hydrocarbons, ketones and esters shall not be used for ICF walls with expanded polystyrene form material. Use of plastic roofing cements, acrylic coatings, latex coatings, mortars and pargings to seal ICF walls is permitted. Cold-setting asphalt or hot asphalt shall conform to Type C of ASTM D449. Hot asphalt shall be applied at a temperature of less than 200°F (93°C).</p>					
RB176-19	<p style="text-align: center;">SECTION R408 UNDER-FLOOR SPACE</p> <p>R408.1 Ventilation. Moisture Control. The under-floor space between the bottom of the floor joists and the earth under any building (except space occupied by a <i>basement</i>) shall have ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall be not less than 1 square foot (0.0929 m²) for each 150 square feet (14 m²) of under floor space area, unless the ground surface is covered by a Class 1 vapor retarder material. Where a Class 1 vapor retarder material is used, the minimum net area of ventilation openings shall be not less than 1 square foot (0.0929 m²) for each 1,500 square feet (140 m²) of under floor space area. One such ventilating opening shall be within 3 feet (914 mm) of each corner of the building <u>comply with Section R408.2 or Section R408.3.</u></p> <p>R408.2 <u>Openings for under-floor ventilation. Ventilation openings through foundation or exterior walls surrounding the under-floor space shall be provided in accordance with this section.</u> The minimum net area of ventilation openings shall be not less than 1 square foot (0.0929 m²)</p>		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>for each 150 square feet (14 m²) of under-floor area. One ventilation opening shall be within 3 feet (915 mm) of each <u>external</u> corner of the building <u>under-floor space</u>. Ventilation openings shall be covered for their height and width with any of the following materials provided that the least dimension of the covering shall not exceed 1/4 inch (6.4 mm), <u>and operational louvers are permitted:</u></p> <ol style="list-style-type: none"> 1. Perforated sheet metal plates not less than 0.070 inch (1.8 mm) thick. 2. Expanded sheet metal plates not less than 0.047 inch (1.2 mm) thick. 3. Cast-iron grill or grating. 4. Extruded load-bearing brick vents. 5. Hardware cloth of 0.035 inch (0.89 mm) wire or heavier. 6. Corrosion-resistant wire mesh, with the least dimension being 1/8 inch (3.2 mm) thick. <p>Exception Exceptions:</p> <ol style="list-style-type: none"> 1. The total area of ventilation openings shall be permitted to be reduced to 1/1,500 of the under-floor area where the ground surface is covered with an <i>approved</i> Class I vapor retarder material and the required openings are placed to provide cross ventilation of the space. The installation of operable louvers shall not be prohibited. 2. <u>Where the ground surface is covered with an approved class 1 vapor retarder material, ventilation openings are not required to be within 3 feet (915 mm) of each external corner of the under-floor space provided the openings are placed to provide cross ventilation of the space.</u> <p>R408.3 Unvented crawl space. Ventilation openings in For unvented under-floor spaces specified in Sections R408.1 and R408.2 shall not be required where the following items are <u>shall be</u> provided:</p> <ol style="list-style-type: none"> 1. Exposed earth is shall be covered with a continuous Class I vapor retarder. Joints of the vapor retarder shall overlap by 6 inches (152 mm) and shall be sealed or taped. The edges of the vapor retarder shall extend not less than 6 inches (152 mm) up the stem wall and shall be attached and sealed to the stem wall or insulation. 2. One of the following is shall be provided for the under-floor space: <ol style="list-style-type: none"> 2.1. Continuously operated mechanical exhaust ventilation at a rate equal to 1 cubic foot per minute (0.47 L/s) for each 50 square feet (4.7 m²) of crawl space floor area, including an air pathway to the common area (such as a duct or transfer grille), and perimeter walls insulated in accordance with Section N1102.2.11 of this code. 2.2. Conditioned air supply sized to deliver at a rate equal to 1 cubic foot per minute (0.47 L/s) for each 50 square feet (4.7 m²) of under-floor area, including a return air pathway to the 					

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>common area (such as a duct or transfer grille), and perimeter walls insulated in accordance with Section N1102.2.11 of this code.</p> <p>2.3. Plenum in existing structures complying with Section M1601.5, if under-floor space is used as a plenum.</p> <p>2.4. Dehumidification sized to provide 70 pints (33 liters) of moisture removal per day for every 1,000 square feet (93 m2) of crawl space floor area.</p>					
RB177-19	<p style="text-align: center;">SECTION R408 UNDER-FLOOR SPACE</p> <p>R408.3 Unvented crawl space. Ventilation openings in under-floor spaces specified in Sections R408.1 and R408.2 shall not be required where the following items are provided:</p> <ol style="list-style-type: none"> 1. Exposed earth is covered with a continuous Class I vapor retarder. Joints of the vapor retarder shall overlap by 6 inches (152 mm) and shall be sealed or taped. The edges of the vapor retarder shall extend not less than 6 inches (152 mm) up the stem wall and shall be attached and sealed to the stem wall or insulation. 2. One of the following is provided for the under-floor space: <ol style="list-style-type: none"> 2.1. Continuously operated mechanical exhaust ventilation at a rate equal to 1 cubic foot per minute (0.47 L/s) for each 50 square feet (4.7 m2) of crawl space floor area, including an air pathway to the common area (such as a duct or transfer grille), and perimeter walls insulated in accordance with Section N1102.2.11 of this code. 2.2. Conditioned air supply sized to deliver at a rate equal to 1 cubic foot per minute (0.47 L/s) for each 50 square feet (4.7 m2) of under-floor area, including a return air pathway to the common area (such as a duct or transfer grille), and perimeter walls insulated in accordance with Section N1102.2.11 of this code. 2.3. Plenum in existing structures complying with Section M1601.5, if under-floor space is used as a plenum. 2.4. Dehumidification sized to provide 70 pints (33 liters) of moisture removal per day for every 1,000 square feet (93 m2) of crawl space floor area. in accordance with the manufacturer's specifications. 	X			Clarification	
RB178-19	<p>R408.8 Under-floor vapor retarder. In Climate Zones 1A, 2A, and 3A below the warm-humid line, a continuous Class I or II vapor retarder shall be provided on the exposed face of air permeable insulation installed between the floor joists and exposed to the grade in the under-floor space. The vapor retarder shall have a maximum water vapor permeance of 1.5 perms when tested in accordance with Procedure B of ASTM E96.</p> <p>Exception: The vapor retarder shall not be required in unvented crawl spaces constructed in accordance with Section R408.3.</p>			X	Necessary addition for clarification	

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB179-19	In 2012, full-scale testing of visually-graded southern pine lumber was underway and preliminary results indicated that some changes to visually-graded southern pine design values would be required. Unfortunately, the testing and certification of design values were not going to be completed in time to submit new design tables to the 2015 IRC, if required. Several 2012 IRC tables, which had been based on minimum design values for No. 2 grade Hem-Fir or SPF lumber, also applied to No. 2 grade southern pine. As an interim recommendation until new design values could be certified, a sentence was added to those tables restricting the applicability to No.1 grade or better southern pine lumber. Since that time, new design values for southern pine have been certified. Bending design values for No. 2 grade southern pine are slightly less than No. 2 grade Hem-Fir lumber, but Modulus of Elasticity (MOE) and shear design values are higher than those for Hem-Fir. Analysis of the tabulated cantilever spans in Tables R502.3.3(1) and R502.3.3(2) has confirmed that the spans were deflection-controlled based on the MOE of No. 2 grade of Hem-Fir lumber. Since No. 2 grade southern pine lumber has a higher MOE value than No. 2 grade Hem-Fir lumber, there is no need for the added sentence at the end of footnote “b” in Table R502.3.3(1) and at the end of footnote “a” in Table R502.3.3(2) restricting the applicability to No. 1 or better southern pine lumber.	X			Difference between #1 and #2 KD Southern Pine	Updates footnotes for Southern Pine
RB180-19	R505.1.1.1 Alternate Applications. Cold-formed steel floor framing for buildings exceeding the applicability limits of Section R505.1.1 are permitted to be designed and constructed in accordance with AISI S230, subject to the limits therein. R603.1.1.1 Alternate Applications. Cold-formed steel wall framing for buildings exceeding the applicability limits of Section R603.1.1 are permitted to be designed and constructed in accordance with AISI S230, subject to the limits therein. R804.1.1.1 Alternate Applications. Cold-formed steel roof and ceiling framing for buildings exceeding the applicability limits of Section R804.1.1 are permitted to be designed and constructed in accordance with AISI S230, subject to the limits therein.		X			Clarification
RB181-19	R505.1.3 Floor trusses. Cold-formed steel trusses shall be designed, braced and installed in accordance with AISI S230 Section D8. <u>In absence of specific bracing requirements, trusses shall be braced in accordance with accepted industry practices, such as the SBCA Cold-Formed Steel Building Component Safety Information (CFSBCSI), Guide to Good Practice for Handling, Installing & Bracing of Cold-Formed Steel Trusses.</u> Truss members shall not be notched, cut or altered in any manner without an <i>approved</i> design.		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																																																																																																																																																																																																																																																																																																																																																																									
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	<p>R804.3.6 Roof trusses. Cold-formed steel trusses shall be designed and installed in accordance with AISI S230 Section F6. In absence of specific bracing requirements, trusses shall be braced in accordance with accepted industry practices, such as the <i>SBCA Cold-Formed Steel Building Component Safety Information (CFSBCSI), Guide to Good Practice for Handling, Installing & Bracing of Cold-Formed Steel Trusses</i>. Trusses shall be connected to the top track of the load-bearing wall in accordance with Table R804.3, either with the required number of No. 10 screws applied through the flange of the truss or by using a 54-mil (1.37 mm) clip angle with the required number of No. 10 screws in each leg.</p>																																																																																																																																																																																																																																																																																																																																																																																																														
RB184-19	<p style="text-align: center;">TABLE R507.3.1 MINIMUM FOOTING SIZE FOR DECKS</p> <table border="1"> <thead> <tr> <th rowspan="3">LIVE OR GROUND SNOW LOAD^b (psf)</th> <th rowspan="3">TRIBUTARY AREA^a (sq. ft.)</th> <th colspan="9">SOIL BEARING CAPACITY^{a,c,d}</th> </tr> <tr> <th colspan="3">1500 psf</th> <th colspan="3">2000 psf</th> <th colspan="3">≥ 3000 psf</th> </tr> <tr> <th>Side of a square footing (inches)</th> <th>Diameter of a round footing (inches)</th> <th>Thickness t (inches)</th> <th>Side of a square footing (inches)</th> <th>Diameter of a round footing (inches)</th> <th>Thickness t (inches)</th> <th>Side of a square footing (inches)</th> <th>Diameter of a round footing (inches)</th> <th>Thickness t (inches)</th> </tr> </thead> <tbody> <tr><td rowspan="8">40</td><td>5</td><td>7</td><td>8</td><td>6</td><td>7</td><td>8</td><td>6</td><td>7</td><td>8</td><td>6</td></tr> <tr><td>20</td><td>10</td><td>+0.12</td><td>6</td><td>9</td><td>9</td><td>6</td><td>7</td><td>8</td><td>6</td></tr> <tr><td>40</td><td>14</td><td>+4.15</td><td>7.5</td><td>12</td><td>+0.14</td><td>6</td><td>10</td><td>+0.12</td><td>6</td></tr> <tr><td>60</td><td>17</td><td>+0.12</td><td>9.5</td><td>15</td><td>+5.12</td><td>9.5</td><td>12</td><td>+0.14</td><td>6</td></tr> <tr><td>80</td><td>20</td><td>22</td><td>7</td><td>17</td><td>19</td><td>6</td><td>14</td><td>16</td><td>6</td></tr> <tr><td>100</td><td>22</td><td>25</td><td>8</td><td>19</td><td>21</td><td>6</td><td>15</td><td>17</td><td>6</td></tr> <tr><td>120</td><td>24</td><td>27</td><td>9</td><td>21</td><td>23</td><td>7</td><td>17</td><td>19</td><td>6</td></tr> <tr><td>140</td><td>26</td><td>29</td><td>10</td><td>22</td><td>25</td><td>8</td><td>18</td><td>21</td><td>6</td></tr> <tr><td>160</td><td>28</td><td>31</td><td>11</td><td>24</td><td>27</td><td>9</td><td>20</td><td>22</td><td>7</td></tr> <tr><td 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Interpolation permitted, extrapolation not permitted. b. Based on highest load case: Dead + Live or Dead + Snow.</p>	LIVE OR GROUND SNOW LOAD ^b (psf)	TRIBUTARY AREA ^a (sq. ft.)	SOIL BEARING CAPACITY ^{a,c,d}									1500 psf			2000 psf			≥ 3000 psf			Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness t (inches)	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness t (inches)	Side of a square footing (inches)	Diameter of a round footing (inches)	Thickness t (inches)	40	5	7	8	6	7	8	6	7	8	6	20	10	+0.12	6	9	9	6	7	8	6	40	14	+4.15	7.5	12	+0.14	6	10	+0.12	6	60	17	+0.12	9.5	15	+5.12	9.5	12	+0.14	6	80	20	22	7	17	19	6	14	16	6	100	22	25	8	19	21	6	15	17	6	120	24	27	9	21	23	7	17	19	6	140	26	29	10	22	25	8	18	21	6	160	28	31	11	24	27	9	20	22	7	50	5	7	8	6	7	8	6	7	8	6	20	11	+0.13	6	10	+0.11	6	8	9.2	6	40	+6.15	+6.12	6	9.13	+4.15	6	11	+0.13	6	60	19	21	6	16	18	6	13	15	6	80	21	24	8	19	21	6	15	17	6	100	24	27	9	21	23	7	17	19	6	120	26	30	10	23	26	8	19	21	6	140	28	32	11	25	28	9	20	23	7	160	30	34	12	26	30	10	21	24	8	60	5	7	8	6	7	8	6	7	8	6	20	12	+0.14	6	11	+4.12	6	9	9.10	6	40	+7.15	+0.19	6	+5.14	+6.15	6	12	+0.14	6	60	20	23	7	17	20	6	14	16	6	80	23	26	9	20	23	7	16	19	6	100	26	29	10	22	25	8	18	21	6	120	28	32	11	25	28	9	20	23	7	140	31	35	12	27	30	10	22	24	8	160	33	37	13	28	32	11	23	26	9	70	5	7	8	6	7	8	6	7	8	6	20	+0.12	14	7.5	11	+0.13	6	9	10	6	40	18	+0.20	9.5	+0.15	17	9.5	+0.12	14	7.5	60	21	24	8	19	21	6	15	17	6	80	25	28	9	21	24	8	18	20	6	100	28	31	11	24	27	9	20	22	7	120	30	34	12	26	30	10	21	24	8	140	33	37	13	28	32	11	23	26	9	160	35	40	15	30	34	12	25	28	9		X			Clarification
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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																																																																																																																																																																																																																																																																																																																																																																																																								
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	<p>c. Footing dimensions shall allow complete bearing of the post.</p> <p>d. If the support is a brick or CMU pier, the footing shall have a minimum 2-inch projection on all sides.</p> <p>e. Area, in square feet, of deck surface supported by post and footings.</p> <p>f. Minimum thickness shall only apply to plain concrete footings.</p> <p>R507.4 Deck posts. For single-level decks, wood deck post size shall be in accordance with Table R507.4.</p> <p style="text-align: center;">TABLE R507.4 DECK POST HEIGHT</p> <p>Portions of table not shown remain unchanged.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="4">LOADS^b (psf)</th> <th rowspan="4">POST SPECIES^c</th> <th rowspan="4">POST SIZE^d</th> <th colspan="8">TRIBUTARY AREA^{e,f} (sqft)</th> </tr> <tr> <th colspan="8">MAXIMUM DECK POST HEIGHT^g</th> </tr> <tr> <th colspan="8">(feet-inches)</th> </tr> <tr> <th colspan="8">Tributary Area^{h,i} (sqm)</th> </tr> <tr> <th></th> <th></th> <th></th> <th>20</th> <th>40</th> <th>60</th> <th>80</th> <th>100</th> <th>120</th> <th>140</th> <th>160</th> </tr> </thead> <tbody> <tr> <td rowspan="12">40 Live Load</td> <td rowspan="4">Southern Pine</td> <td>4 x 4</td> <td>14-0</td> <td>13-8</td> <td>11-0</td> <td>9-5</td> <td>8-4</td> <td>7-5</td> <td>6-9</td> <td>6-2</td> <td></td> </tr> <tr> <td>4 x 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	Douglas Fir ^o	4 x 4	14-0	12-1	9-8	8-2	7-1	6-2	5-3	4-2																																																																																																																																																																																																																																																																																																																																																																																																																																				
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	Hem-fir ^e	6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	14-0	12-10																																																																																																																																																																																																																																																																																																																																																																																																																																				
		8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0																																																																																																																																																																																																																																																																																																																																																																																																																																				
	SPF ^e	4 x 4	14-0	11-8	9-0	6-10	3-7	NP	NP	NP																																																																																																																																																																																																																																																																																																																																																																																																																																				
		4 x 6	14-0	14-0	12-0	10-0	8-6	7-0	5-3	NP																																																																																																																																																																																																																																																																																																																																																																																																																																				
		6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	10-8	2-4																																																																																																																																																																																																																																																																																																																																																																																																																																				
		8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0																																																																																																																																																																																																																																																																																																																																																																																																																																				
Redwood ^l	4 x 4	14-0	11-8	9-0	6-10	3-7	NP	NP	NP																																																																																																																																																																																																																																																																																																																																																																																																																																					
	4 x 6	14-0	14-0	12-0	10-0	8-6	7-0	5-3	NP																																																																																																																																																																																																																																																																																																																																																																																																																																					
Western Cedars ^l	6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	10-8	2-4																																																																																																																																																																																																																																																																																																																																																																																																																																					
	8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0																																																																																																																																																																																																																																																																																																																																																																																																																																					
Ponderosa Pine ^l	8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0																																																																																																																																																																																																																																																																																																																																																																																																																																					
Red Pine ^l	8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0																																																																																																																																																																																																																																																																																																																																																																																																																																					
Southern Pine	4 x 4	14-0	11-1	8-11	7-7	6-7	5-10	5-2	4-6																																																																																																																																																																																																																																																																																																																																																																																																																																					
	4 x 6	14-0	14-0	11-4	9-9	8-7	7-9	7-1	6-6																																																																																																																																																																																																																																																																																																																																																																																																																																					
	6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	12-9	11-2																																																																																																																																																																																																																																																																																																																																																																																																																																					
	8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0																																																																																																																																																																																																																																																																																																																																																																																																																																					

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY										IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE	
											Decrease	None	Increase			
Sub Code:																
60 Ground Snow Load	Douglas Fir ^e ,	4 x 4	14-0	10-11	8-8	7-3	6-2	5-0	3-7	NP						
	Hem-fir ^e ,	4 x 6	14-0	13-11	12-11 9-7	8-4	7-5	6-8	5-11							
	SPF ^e	6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	12-2	10-2						
	8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0						
	Redwood ^f ,	4 x 4	14-0	10-6	7-9	4-7	NP	NP	NP	NP						
	Western Cedars f,	4 x 6	14-0	13-7	10-9	8-9	7-0	4-9	NP	NP						
	Ponderosa Pine f,	6 x 6	14-0	14-0	14-0	14-0	14-0	9-9	NP	NP						
	Red Pine f	8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0						
	70 Ground Snow Load	Southern Pine	4 x 4	14-0	10-2	8-2	6-11	5-11	5-2	4-4	3-4					
			4 x 6	14-0	12-11	10-5	8-11	7-10	7-1	6-5	5-10					
			6 x 6	14-0	14-0	14-0	14-0	14-0	12-9	10-11	8-7					
			8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0					
		Douglas Fir ^e ,	4 x 4	14-0	10-1	7-11	6-6	5-3	3-7	NP	NP					
			4 x 6	14-0	12-10	10-3	8-9	7-7	6-8	5-10	4-11					
		Hem-fir ^e ,	6 x 6	14-0	14-0	14-0	14-0	14-0	14-0	12-2	9-9	5-9				
			8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0					
		SPF ^e	Redwood ^f ,	4 x 4	14-0	9-5	6-5	NP	NP	NP	NP	NP				
			Western Cedars ^f ,	4 x 6	14-0	12-6	9-8	7-7	5-3	NP	NP	NP				
			Ponderosa Pine ^f ,	6 x 6	14-0	14-0	14-0	14-0	10-8	NP	NP	NP				
			Red Pine ^f	8 x 8	14-0	14-0	14-0	14-0	14-0	14-0	14-0	14-0				

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa., NP = Not Permitted

- Measured from the underside of the beam to top of footing or pier.
- 10 psf dead load. Snow load not assumed to be concurrent with live load.
- No. 2 grade, wet service factor included.
- Notched deck posts shall be sized to accommodate beam size per in accordance with Section R507.5.2
- Includes incising factor.
- Incising factor not included.
- Area, in square feet, of deck surface supported by post and footings.
- Interpolation permitted. Extrapolation not permitted.

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		

Sub Code:

**TABLE R507.5(1)
MAXIMUM DECK BEAM SPAN - 40 PSF LIVE LOAD ^c**

BEAM SPECIES ^d	BEAM SIZE ^e	DECK JOIST SPAN ^f (feet)							
		MAXIMUM BEAM SPAN ^{g,h} (feet-inches)							
		Deck Joist Span ^h							
		6	8	10	12	14	16	18	
Southern Pine	1-2 x 6	4-7	4-0	3-7	3-3	3-0	2-10	2-7 2/8	
	1-2 x 8	5-10 5-11	5-1	4-6 4-7	4-4 1/2	3-10	3-7	3-4 3-5	
	1-2 x 10	6-11 7-0	6-0	5-4 5-5	4-11	4-6 4-7	4-3	4-0	
	1-2 x 12	6-8 8-3	7-1	6-4	5-9 5-10	5-4 5-5	5-0	4-6 4-9	
	2-2 x 6	4-10 6-11	5-11	5-0 5-4	4-10	4-6	4-2 4-3	3-11 4-0	
	2-2 x 8	4-6 8-9	7-6 7-7	6-9	6-2	5-6 5-9	5-4	5-0	
	2-2 x 10	10-4	8-11 9-0	8-0	7-9 7-4	6-9	6-4	5-11 6-0	
	2-2 x 12	12-2	10-6 10-7	9-5	8-7	7-11 8-0	7-5	7-0	
	3-2 x 6	8-6	7-5	6-8	6-1	5-7 5-8	5-3	4-11	
	3-2 x 8	10-11	8-9 9-6	8-5 8-6	7-9 7-9	7-7 7-2	6-8	6-0 6-4	
	3-2 x 10	12-11 13-0	11-2	10-0	9-1 9-2	8-5 8-6	7-11	7-5 7-6	
	3-2 x 12	15-3	13-2 13-3	11-10 11-10	10-9	9-11 10-0	9-4	8-9 8-10	
Douglas fir-larch ^g , Hem-fir ^g , Spruce-pine fir ^g	1-2 x 6	4-1	3-6	3-0	2-6 2-8	2-2 2-5	1-10 2-3	1-7 2-1	
	1-2 x 8	5-6	4-9 4-8	4-0	3-9 3-6	3-9 3-2	2-5 2-11	2-1 2-9	
	1-2 x 10	6-8	5-10	5-1	4-2 4-6	3-6 4-1	3-1 3-9	2-6 3-6	
	1-2 x 12	7-9	6-9	6-0	5-1 5-6	4-4 5-0	3-9	3-0 3-6	
	2-2 x 6	6-1	5-3	4-9	4-4	4-0 3-11	3-6 3-7	3-3	
	2-2 x 8	8-2	7-1	6-4	5-9	5-4 5-2	4-10 4-8	4-0 4-4	
	2-2 x 10	10-0	8-7	7-9	7-0	6-6	5-11 6-0	5-5 5-6	
	2-2 x 12	11-7	10-0	8-11	8-2	7-7	7-1	6-7 6-8	
	3-2 x 6	7-8	6-7 6-8	5-11 6-0	5-5 5-6	5-0 5-1	4-0 4-9	4-5 4-6	
	3-2 x 8	10-3	8-10	7-11	7-3	6-8	6-3	5-11	
	3-2 x 10	12-6	10-10	9-8	8-10	8-2	7-8	7-2	
	3-2 x 12	14-6	12-7	11-3	10-3	9-6	8-11	8-5	
Redwood ^g , Western Cedars ^h , Ponderosa Pine ^g , Red Pine ^h	1-2 x 6	4-2	3-7	3-1	2-7 2-9	2-2 2-6	1-10 2-3	1-0 2-2	
	1-2 x 8	5-4	4-7	4-1	3-4 3-7	2-10 3-3	2-6 3-0	2-2 2-10	
	1-2 x 10	6-6	5-7	5-0	4-9 4-7	3-6 4-2	3-2 3-10	2-9 3-7	
	1-2 x 12	7-6	6-6	5-10	5-9 5-4	4-5 4-11	3-10 4-7	3-5 4-4	
	2-2 x 6	6-2	5-4	4-10	4-5	4-1 4-0	3-9 3-8	3-4	
	2-2 x 8	7-10	6-10	6-1	5-7	5-2	4-10	4-4 4-5	
	2-2 x 10	9-7	8-4	7-5	6-9	6-3	5-10	5-6	
	2-2 x 12	11-1	9-8	8-7	7-10	7-3	6-10	6-5	
	3-2 x 6	7-8	6-9	6-0	5-6	5-1	4-9	4-6	
	3-2 x 8	9-10	8-6	7-7	6-11	6-5	6-0	5-8	
	3-2 x 10	12-0	10-5	9-4	8-6	7-10	7-4	6-11	
	3-2 x 12	13-11	12-1	10-9	9-10	9-1	8-6	8-1	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

- a. Interpolation permitted. Extrapolation not permitted.
- b. Beams supporting a single span of joists with or without cantilever.
- c. Dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever
Snow load not assumed to be concurrent with live load.
- d. No. 2 grade, wet service factor included.
- e. Beam depth shall be equal to or greater than the depth intersecting joist for a flush beam connection.
- f. Beam cantilevers are limited to the adjacent beam's span/4
- g. Includes incising factor.
- h. Incising factor not included.
- i. Deck joist span as shown in Figure R507.5

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		

Sub Code:

**TABLE R507.5(2)
MAXIMUM DECK BEAM SPAN - 50 PSF GROUND SNOW LOAD ^c**

BEAM SPECIES ^d	BEAM SIZE ^e	DECK JOIST SPAN**							
		MAXIMUM BEAM SPAN (ft)							
		(feet-inches)							
		Deck Joist Span ^f							
		(feet)							
		6	8	10	12	14	16	18	
Southern Pine	1-2x6	4-0.4.6	0-6.3.11	0-0.3.6	0-+3.2	0-0.2.11	0-6.2.9	0-2.2.7	
	1-2x8	0-4.5.9	4-7.4.11	4-+4.5	0-0.4.0	0-0.3.9	0-0.3.6	0-10.3.3	
	1-2x10	0-4.6.9	0-6.5.10	4-+5.3	4-6.4.9	4-0.4.5	0-+0.4.2	0-0.3.11	
	1-2x12	7-6.8.0	0-6.6.11	0-0.6.2	0-0.5.8	4-+0.5.3	4-7.4.11	4-0.4.7	
	2-2x6	0-0.6.8	0-6.5.9	4-+0.5.2	4-5.4.9	4-+4.4	0-+0.4.1	0-7.3.10	
	2-2x8	7-+8.6	0-10.7.4	0-0.6.7	0-7.6.0	0-0.5.7	4-+0.5.2	4-7.4.11	
	2-2x10	0-6.10.1	0-0.8.9	7-0.7.10	0-0.7.1	0-0.6.7	0-0.6.2	0-6.5.10	
	2-2x12	++-11.11	0-7.10.3	0-7.9.2	7-+0.8.5	7-0.7.9	0-0.7.3	0-6.6.10	
	3-2x6	7-+0.7.11	0-0.7.2	0-+6.6	0-6.5.11	0-+5.6	4-0.5.1	4-6.4.10	
	3-2x8	0-+10.5	0-7.9.3	7-0.8.3	7-0.7.6	0-6.6.11	0-+0.6.6	0-0.6.2	
	3-2x10	++-0.12.8	++-0.10.11	0-+9.9	0-+8.11	7-0.8.3	7-0.7.9	0-0.7.3	
	3-2x12	++-+14.11	++-0.12.11	++-0.11.6	0-+0.10.6	0-+9.9	0-6.9.1	0-0.8.7	
	Douglas fir-larch ^g	1-2x6	0-0.4.0	0-0.3.5	0-6.2.11	0-+2.7	4-0.2.4	4-6.2.2	4-4.2.0
1-2x8		0-0.5.4	4-0.4.7	0-4.3.11	0-0.3.5	0-0.3.1	0-0.2.10	4-0.2.8	
1-2x10		0-+6.7	0-4.5.8	4-0.4.11	0-6.4.5	0-+4.0	0-6.3.8	0-0.3.5	
Hem fir ^g	1-2x12	7-+7.7	0-0.6.7	0-0.5.11	4-0.5.4	0-7.4.10	0-+4.6	0-0.4.2	
	2-2x6	0-7.6.0	4-+0.5.2	4-+4.7	0-+4.2	0-6.3.10	0-0.3.5	0-0.3.2	
Spruce-pine fir ^g	2-2x8	7-6.8.0	0-6.6.11	0-0.6.2	0-0.5.8	4-7.5.0	4-0.4.7	0-6.4.2	
	2-2x10	0-+9.9	7-+0.8.5	7-0.7.7	0-6.6.11	0-+4.6.4	0-+5.10	4-6.5.4	
	2-2x12	++-7.11.4	0-0.9.10	0-0.8.9	7-6.8.0	0-+7.5	0-6.6.11	0-6.6.6	
	3-2x6	7-0.7.6	0-0.6.6	0-6.5.9	4-+4.5.3	4-7.4.11	4-0.4.7	4-0.4.4	
	3-2x8	0-4.10.0	0-+8.8	7-0.7.9	0-7.7.1	0-+6.6	0-6.6.1	0-4.5.8	
	3-2x10	++-12.3	0-+0.10.7	0-+0.9.6	0-+8.8	7-0.8.0	7-0.7.6	0-7.7.0	
Redwood ^h	1-2x6	0-+0.4.1	0-4.3.6	0-7.3.0	0-0.2.8	4-+0.2.5	4-7.2.3	4-6.2.1	
	1-2x8	4-+0.5.2	4-2.4.6	0-5.4.0	0-+0.3.6	0-4.3.2	0-+2.11	4-+0.2.9	
	1-2x10	0-+6.4	0-+5.6	4-4.4.11	0-7.4.6	0-0.4.1	0-0.3.9	0-4.3.6	
	1-2x12	0-+0.7.4	0-+1.6.4	0-4.5.8	4-4.5.2	0-0.4.10	0-0.4.6	0-+0.4.3	
	2-2x6	0-0.6.1	4-+4.5.3	4-5.4.8	4-0.4.4	0-7.3.11	0-+3.6	0-0.3.3	
	2-2x8	7-0.7.8	0-0.6.8	0-7.5.11	0-+5.5	4-0.5.0	4-+4.8	0-0.4.3	
	Ponderosa Pine ^h	2-2x10	0-0.9.5	7-7.8.2	0-0.7.3	0-0.6.8	0-0.6.2	0-0.5.9	4-0.5.5
		2-2x12	++-0.10.11	0-+0.9.5	7-+0.8.5	7-0.7.8	0-0.7.2	0-0.6.8	0-0.6.3
	Red Pine ^h	3-2x6	7-1	0-2.6.5	0-6.5.11	0-0.5.5	4-0.5.0	4-4.4.8	4-+4.5
		3-2x8	0-0.9.4	7-0.8.4	0-+1.7.5	0-4.6.10	0-+1.6.4	0-6.5.11	0-0.5.7
		3-2x10	++-0.11.9	0-6.10.2	0-6.9.1	7-0.8.4	7-2.7.8	0-0.7.2	0-4.6.9
		3-2x12	++-0.13.8	++-0.11.10	0-+0.10.7	0-0.9.8	0-4.8.11	7-0.8.4	7-4.7.10

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

- a. Interpolation allowed. Extrapolation is not allowed.
- b. Beams supporting a single span of joists with or without cantilever.
- c. Dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever. Snow load not assumed to be concurrent with live load.
- d. No. 2 grade, wet service factor included.
- e. Beam depth shall be equal to or greater than the depth of intersecting joist for a flush beam connection.

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																																																																																																																																																																																																																																																																																																										
		Decrease	None	Increase																																																																																																																																																																																																																																																																																																																																												
Sub Code:																																																																																																																																																																																																																																																																																																																																																
	<p>f. Beam cantilevers are limited to the adjacent beam's span/4. g. Includes incising factor h. Incising factor not included. i. Deck joist span as shown in Figure R507.5</p> <p style="text-align: center;">TABLE R507.5(3) MAXIMUM DECK BEAM SPAN - 60 PSF GROUND SNOW LOAD ^c</p> <p><small>Portions of table not shown remain unchanged.</small></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="4">BEAM SPECIES^a</th> <th rowspan="4">BEAM SIZE^a</th> <th colspan="7">DECK JOIST SPAN^{b,c,d}(feet)</th> </tr> <tr> <th colspan="7">MAXIMUM BEAM SPAN^{a,b,e}</th> </tr> <tr> <th colspan="7">(feet-inches)</th> </tr> <tr> <th colspan="7">Deck Joist Span^d</th> </tr> <tr> <th colspan="2"></th> <th>6</th> <th>8</th> <th>10</th> <th>12</th> <th>14</th> <th>16</th> <th>18</th> </tr> </thead> <tbody> <tr> <td rowspan="12">Southern Pine</td> <td>1-2x6</td> <td>0-+1.2</td> <td>0-+2.7</td> <td>0-+2.3</td> <td>0-+2.11</td> <td>0-+2.3</td> <td>0-+2.6</td> <td>1-+0.25</td> </tr> <tr> <td>1-2x8</td> <td>0-+1.5</td> <td>0-+3.7</td> <td>0-+2.11</td> <td>0-+2.3</td> <td>0-+2.5</td> 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0.454 kg.</p> <p>a. Interpolation allowed. Extrapolation is not allowed. b. Beams supporting a single span of joists with or without cantilever. c. Dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever. Snow load not assumed to be concurrent with live load. d. No. 2 grade, wet service factor included. e. Beam depth shall be equal to or greater than the depth of intersecting joist for a flush beam connection. f. Beam cantilevers are limited to the adjacent beam's span divided by 4. g. Includes incising factor h. Incising factor not included. i. Deck joist span as shown in Figure R507.5</p>	BEAM SPECIES ^a	BEAM SIZE ^a	DECK JOIST SPAN ^{b,c,d} (feet)							MAXIMUM BEAM SPAN ^{a,b,e}							(feet-inches)							Deck Joist Span ^d									6	8	10	12	14	16	18	Southern Pine	1-2x6	0-+1.2	0-+2.7	0-+2.3	0-+2.11	0-+2.3	0-+2.6	1-+0.25	1-2x8	0-+1.5	0-+3.7	0-+2.11	0-+2.3	0-+2.5	0-+2.3	0-+3.5	1-2x10	0-+2.3	0-+2.5	0-+2.10	0-+2.3	0-+2.10	0-+2.10	0-+3.7	1-2x12	0-+2.5	0-+3.5	0-+2.3	0-+2.3	0-+2.3	0-+2.3	0-+2.3	2-2x6	0-+2.2	0-+2.4	0-+2.3	0-+2.3	0-+2.3	0-+2.3	0-+2.3	2-2x8	0-+2.10	0-+2.10	0-+2.1	0-+2.2	0-+2.2	0-+2.10	0-+2.6	2-2x10	0-+2.4	0-+2.1	0-+2.2	0-+2.2	0-+2.1	0-+2.3	0-+2.4	2-2x12	0-+2.10	0-+2.3	0-+2.3	0-+2.2	0-+2.2	0-+2.2	0-+2.4	3-2x6	0-+2.5	0-+2.3	0-+2.3	0-+2.3	0-+2.1	0-+2.3	0-+2.6	3-2x8	0-+2.3	0-+2.3	0-+2.3	0-+2.3	0-+2.1	0-+2.3	0-+2.6	3-2x10	0-+2.11	0-+2.10	0-+2.1	0-+2.3	0-+2.2	0-+2.2	0-+2.6	3-2x12	0-+2.10	0-+2.11	0-+2.10	0-+2.3	0-+2.3	0-+2.3	0-+2.7	Douglas fir-larch ^f	1-2x6	0-+3.3	0-+3.1	0-+2.3	0-+2.4	0-+2.2	0-+2.0	1-+1.10	1-2x8	0-+4.5	0-+4.1	0-+3.3	0-+3.1	0-+2.10	0-+2.7	0-+2.4	1-2x10	0-+5.1	0-+5.2	0-+4.3	0-+4.3	0-+3.7	0-+3.4	0-+3.2	1-2x12	0-+7.1	0-+6.1	0-+5.5	0-+4.10	0-+4.5	0-+4.1	0-+3.10	2-2x6	0-+3.5	0-+4.3	0-+3.3	0-+3.3	0-+3.3	0-+2.10		2-2x8	0-+4.5	0-+4.3	0-+3.3	0-+3.3	0-+3.1	0-+3.3		2-2x10	0-+5.0	0-+7.10	0-+7.0	0-+6.4	0-+5.9	0-+5.2	0-+4.10	2-2x12	0-+10.6	0-+9.1	0-+7.1	0-+7.1	0-+6.10	0-+6.4	0-+5.10	3-2x6	0-+5.11	0-+5.0	0-+4.4	0-+4.11	0-+4.2	0-+4.2	0-+3.10	3-2x8	0-+5.3	0-+5.0	0-+4.2	0-+4.4	0-+4.1	0-+3.6	0-+3.0	3-2x10	0-+7.11	0-+6.10	0-+5.3	0-+5.3	0-+4.7	0-+4.1	0-+3.6	3-2x12	0-+10.2	0-+11.5	0-+10.2	0-+9.4	0-+8.7	0-+8.1	0-+7.7	Redwood ^h	1-2x6	0-+3.3	0-+3.2	0-+2.3	0-+2.2	0-+2.2	0-+2.0	0-+1.11	1-2x8	0-+4.10	0-+3.2	0-+3.7	0-+3.2	0-+2.11	0-+2.8	0-+2.6	1-2x10	0-+5.10	0-+3.1	0-+3.6	0-+3.1	0-+2.3	0-+2.3	0-+3.3	1-2x12	0-+5.10	0-+3.11	0-+3.3	0-+3.10	0-+2.3	0-+2.2	0-+3.11	2-2x6	0-+3.7	0-+3.10	0-+3.4	0-+3.11	0-+3.3	0-+3.2	0-+2.11	2-2x8	0-+7.1	0-+5.2	0-+5.6	0-+5.1	0-+4.7	0-+4.2	0-+3.10	2-2x10	0-+8.0	0-+7.5	0-+6.3	0-+6.2	0-+5.6	0-+5.4	0-+4.11	2-2x12	0-+10.1	0-+9.3	0-+7.10	0-+7.2	0-+6.7	0-+6.2	0-+5.10	3-2x6	0-+5.6	0-+5.1	0-+5.5	0-+5.0	0-+4.7	0-+4.3	0-+3.11	3-2x8	0-+5.0	0-+2.9	0-+4.11	0-+4.4	0-+4.10	0-+3.5	0-+3.2	3-2x10	0-+10.11	0-+9.3	0-+8.5	0-+7.8	0-+7.2	0-+6.8	0-+5.3	3-2x12	0-+12.8	0-+10.11	0-+9.3	0-+8.3	0-+7.9	0-+7.9	0-+7.3					
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	1-2x8	0-+4.5	0-+4.1	0-+3.3	0-+3.1	0-+2.10	0-+2.7	0-+2.4																																																																																																																																																																																																																																																																																																																																								
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	1-2x12	0-+7.1	0-+6.1	0-+5.5	0-+4.10	0-+4.5	0-+4.1	0-+3.10																																																																																																																																																																																																																																																																																																																																								
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	2-2x10	0-+5.0	0-+7.10	0-+7.0	0-+6.4	0-+5.9	0-+5.2	0-+4.10																																																																																																																																																																																																																																																																																																																																								
	2-2x12	0-+10.6	0-+9.1	0-+7.1	0-+7.1	0-+6.10	0-+6.4	0-+5.10																																																																																																																																																																																																																																																																																																																																								
	3-2x6	0-+5.11	0-+5.0	0-+4.4	0-+4.11	0-+4.2	0-+4.2	0-+3.10																																																																																																																																																																																																																																																																																																																																								
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	3-2x12	0-+10.2	0-+11.5	0-+10.2	0-+9.4	0-+8.7	0-+8.1	0-+7.7																																																																																																																																																																																																																																																																																																																																								
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	3-2x12	0-+12.8	0-+10.11	0-+9.3	0-+8.3	0-+7.9	0-+7.9	0-+7.3																																																																																																																																																																																																																																																																																																																																								

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY						IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																																																																																																																																																																																																																																																																																																																																																																																																	
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TABLE R507.5(4) MAXIMUM DECK BEAM SPAN - 70 PSF GROUND SNOW LOAD ^c																																																																																																																																																																																																																																																																																																																																																																																																																																												
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="4">BEAM SPECIES ^d</th> <th rowspan="4">BEAM SIZE ^e</th> <th colspan="8">DECK JOIST SPAN (feet) ^a</th> </tr> <tr> <th colspan="8">MAXIMUM BEAM SPAN a,b,f</th> </tr> <tr> <th colspan="8">/ (feet-inches)</th> </tr> <tr> <th colspan="8">Deck Joist Span ^d</th> </tr> <tr> <th colspan="2"></th> <th colspan="8">(feet)</th> </tr> <tr> <th colspan="2"></th> <th>6</th> <th>8</th> <th>10</th> <th>12</th> <th>14</th> <th>16</th> <th>18</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr> <td rowspan="12">Southern Pine</td> <td>1-2x6</td> <td>0+3.11</td> <td>0+3.4</td> <td>0+3.0</td> <td>0+2.3</td> <td>1+0.26</td> <td>1+2.4</td> <td>1+2.3</td> <td colspan="2"></td> </tr> <tr> <td>1-2x8</td> <td>0+4.11</td> <td>0+4.3</td> <td>0+3.10</td> <td>0+3.5</td> <td>0+3.3</td> <td>0+5.0</td> <td>0+2.10</td> <td colspan="2"></td> </tr> <tr> <td>1-2x10</td> <td>0+5.10</td> <td>0+5.1</td> <td>0+4.6</td> 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Pine	1-2x6	0+3.11	0+3.4	0+3.0	0+2.3	1+0.26	1+2.4	1+2.3			1-2x8	0+4.11	0+4.3	0+3.10	0+3.5	0+3.3	0+5.0	0+2.10			1-2x10	0+5.10	0+5.1	0+4.6	0+4.2	0+3.10	0+3.7	0+3.4			1-2x12	0+5.11	0+5.0	0+5.4	0+4.11	0+4.6	0+4.3	0+4.0			2-2x6	0+5.0	0+5.0	0+4.6	0+4.1	0+3.0	0+3.6	0+3.4			2-2x8	0+6.7.4	0+4.6.4	0+5.6	0+5.2	0+4.10	0+4.6	0+4.3			2-2x10	0+6.9	0+7.7	0+6.9	0+6.2	0+5.6	0+5.4	0+5.0			2-2x12	0+7.10.3	0+8.11	0+8.0	0+7.3	0+6.9	0+6.6.3	0+6.5.11			3-2x6	0+7.0	0+6.6.3	0+5.7	0+5.1	0+4.9	0+4.5	0+4.2			3-2x8	0+7.3	0+8.0	0+7.2	0+6.5	0+7.0	0+5.9	0+4.5.4			3-2x10	0+8.10.11	0+10.6	0+10.6	0+7.9	0+7.2	0+6.6	0+6.6.4			3-2x12	0+8.12.11	0+11.2	0+10.0	0+9.1	0+8.6	0+7.11	0+7.6			Douglas fir-larch ^g Item fir ^g Spruce-pine-fir ^g	1-2x6	0+3.5	0+2.10	1+0.2.5	1+2.2	1+2.0	1+1.10	1+1.9			1-2x8	0+4.7	0+3.8	0+3.2	0+2.10	1+2.7	0+2.5	0+2.4			1-2x10	0+5.8	0+4.9	0+4.1	0+3.6	0+3.4	1+1.3.1	0+2.11			1-2x12	0+6.7	0+5.8	0+5.0	0+4.6	0+4.1	0+3.10	0+3.7			2-2x6	0+6.2	0+4.6	0+4.0	0+3.5	0+3.1	0+2.10	0+2.7			2-2x8	0+6.11	0+7.6	0+5.3	0+4.7	0+4.1	0+3.8	0+3.5			2-2x10	0+6.8.5	0+6.7.4	0+6.6	0+5.10	0+5.2	0+4.9	0+4.5			2-2x12	0+9.10	0+8.6	0+7.7	0+6.11	0+5.4	0+5.9	0+5.4			3-2x6	0+6.6	0+5.7	0+5.0	0+4.7	0+4.2	0+3.9	0+3.5			3-2x8	0+7.8	0+7.5	0+6.8	0+6.1	0+5.6	0+5.0	0+4.7			3-2x10	0+10.10.7	0+9.2	0+8.2	0+7.6	0+6.11	0+5.4	0+5.10			3-2x12	0+11.2.4	0+10.6	0+10.6	0+8.9	0+8.1	0+7.7	0+7.1			Redwood ^h Western Cedars ^h Ponderosa Pine ^h Red Pine ^h	1-2x6	0+3.6	0+2.11	1+1.2.6	1+2.3	1+2.0	1+1.11	1+1.9			1-2x8	0+4.6	0+3.10	0+3.3	0+2.11	1+2.6	0+2.6	0+2.4			1-2x10	0+5.6	0+4.9	0+4.2	0+3.9	0+3.5	0+3.2	0+3.0			1-2x12	0+6.4	0+5.6	0+4.11	0+4.6	0+4.2	0+3.11	0+3.8			2-2x6	0+4.5.3	0+4.7	0+4.1	0+3.6	0+3.2	0+2.11	0+2.8			2-2x8	0+6.6	0+5.9	0+5.2	0+4.6	0+4.2	0+3.10	0+3.6			2-2x10	0+7.8.2	0+7.1	0+6.4	0+5.9	0+5.4	0+4.10	0+4.6			2-2x12	0+10.9.5	0+7.8.2	0+7.4	0+6.8	0+6.2	0+5.9	0+5.5			3-2x6	0+6.4	0+5.8	0+5.1	0+4.9	0+4.3	0+3.10	0+3.6			3-2x8	0+8.4	0+7.3	0+6.6	0+5.11	0+5.5	0+5.1	0+4.8			3-2x10	0+10.2	0+9.10	0+7.11	0+7.2	0+6.6	0+6.3	0+5.11			3-2x12	0+11.10	0+10.3	0+9.2	0+8.4	0+7.9	0+7.3	0+6.10		
BEAM SPECIES ^d	BEAM SIZE ^e	DECK JOIST SPAN (feet) ^a																																																																																																																																																																																																																																																																																																																																																																																																																																										
		MAXIMUM BEAM SPAN a,b,f																																																																																																																																																																																																																																																																																																																																																																																																																																										
		/ (feet-inches)																																																																																																																																																																																																																																																																																																																																																																																																																																										
		Deck Joist Span ^d																																																																																																																																																																																																																																																																																																																																																																																																																																										
		(feet)																																																																																																																																																																																																																																																																																																																																																																																																																																										
		6	8	10	12	14	16	18																																																																																																																																																																																																																																																																																																																																																																																																																																				
Southern Pine	1-2x6	0+3.11	0+3.4	0+3.0	0+2.3	1+0.26	1+2.4	1+2.3																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x8	0+4.11	0+4.3	0+3.10	0+3.5	0+3.3	0+5.0	0+2.10																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x10	0+5.10	0+5.1	0+4.6	0+4.2	0+3.10	0+3.7	0+3.4																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x12	0+5.11	0+5.0	0+5.4	0+4.11	0+4.6	0+4.3	0+4.0																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x6	0+5.0	0+5.0	0+4.6	0+4.1	0+3.0	0+3.6	0+3.4																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x8	0+6.7.4	0+4.6.4	0+5.6	0+5.2	0+4.10	0+4.6	0+4.3																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x10	0+6.9	0+7.7	0+6.9	0+6.2	0+5.6	0+5.4	0+5.0																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x12	0+7.10.3	0+8.11	0+8.0	0+7.3	0+6.9	0+6.6.3	0+6.5.11																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x6	0+7.0	0+6.6.3	0+5.7	0+5.1	0+4.9	0+4.5	0+4.2																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x8	0+7.3	0+8.0	0+7.2	0+6.5	0+7.0	0+5.9	0+4.5.4																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x10	0+8.10.11	0+10.6	0+10.6	0+7.9	0+7.2	0+6.6	0+6.6.4																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x12	0+8.12.11	0+11.2	0+10.0	0+9.1	0+8.6	0+7.11	0+7.6																																																																																																																																																																																																																																																																																																																																																																																																																																				
Douglas fir-larch ^g Item fir ^g Spruce-pine-fir ^g	1-2x6	0+3.5	0+2.10	1+0.2.5	1+2.2	1+2.0	1+1.10	1+1.9																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x8	0+4.7	0+3.8	0+3.2	0+2.10	1+2.7	0+2.5	0+2.4																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x10	0+5.8	0+4.9	0+4.1	0+3.6	0+3.4	1+1.3.1	0+2.11																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x12	0+6.7	0+5.8	0+5.0	0+4.6	0+4.1	0+3.10	0+3.7																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x6	0+6.2	0+4.6	0+4.0	0+3.5	0+3.1	0+2.10	0+2.7																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x8	0+6.11	0+7.6	0+5.3	0+4.7	0+4.1	0+3.8	0+3.5																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x10	0+6.8.5	0+6.7.4	0+6.6	0+5.10	0+5.2	0+4.9	0+4.5																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x12	0+9.10	0+8.6	0+7.7	0+6.11	0+5.4	0+5.9	0+5.4																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x6	0+6.6	0+5.7	0+5.0	0+4.7	0+4.2	0+3.9	0+3.5																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x8	0+7.8	0+7.5	0+6.8	0+6.1	0+5.6	0+5.0	0+4.7																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x10	0+10.10.7	0+9.2	0+8.2	0+7.6	0+6.11	0+5.4	0+5.10																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x12	0+11.2.4	0+10.6	0+10.6	0+8.9	0+8.1	0+7.7	0+7.1																																																																																																																																																																																																																																																																																																																																																																																																																																				
Redwood ^h Western Cedars ^h Ponderosa Pine ^h Red Pine ^h	1-2x6	0+3.6	0+2.11	1+1.2.6	1+2.3	1+2.0	1+1.11	1+1.9																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x8	0+4.6	0+3.10	0+3.3	0+2.11	1+2.6	0+2.6	0+2.4																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x10	0+5.6	0+4.9	0+4.2	0+3.9	0+3.5	0+3.2	0+3.0																																																																																																																																																																																																																																																																																																																																																																																																																																				
	1-2x12	0+6.4	0+5.6	0+4.11	0+4.6	0+4.2	0+3.11	0+3.8																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x6	0+4.5.3	0+4.7	0+4.1	0+3.6	0+3.2	0+2.11	0+2.8																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x8	0+6.6	0+5.9	0+5.2	0+4.6	0+4.2	0+3.10	0+3.6																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x10	0+7.8.2	0+7.1	0+6.4	0+5.9	0+5.4	0+4.10	0+4.6																																																																																																																																																																																																																																																																																																																																																																																																																																				
	2-2x12	0+10.9.5	0+7.8.2	0+7.4	0+6.8	0+6.2	0+5.9	0+5.5																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x6	0+6.4	0+5.8	0+5.1	0+4.9	0+4.3	0+3.10	0+3.6																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x8	0+8.4	0+7.3	0+6.6	0+5.11	0+5.5	0+5.1	0+4.8																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x10	0+10.2	0+9.10	0+7.11	0+7.2	0+6.6	0+6.3	0+5.11																																																																																																																																																																																																																																																																																																																																																																																																																																				
	3-2x12	0+11.10	0+10.3	0+9.2	0+8.4	0+7.9	0+7.3	0+6.10																																																																																																																																																																																																																																																																																																																																																																																																																																				
<p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.</p> <p>a. Interpolation allowed. Extrapolation is not allowed.</p> <p>b. Beams supporting a single span of joists with or without cantilever.</p> <p>c. Dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever. Snow load not assumed to be concurrent with live load.</p> <p>d. No. 2 grade, wet service factor included.</p> <p>e. Beam depth shall be equal to or greater than the depth of intersecting joist for a flush beam connection.</p> <p>f. Beam cantilevers are limited to the adjacent beam's span divided by 4.</p> <p>g. Includes incising factor</p> <p>h. Incising factor not included.</p> <p>i. Deck joist span as shown in Figure R507.5</p>																																																																																																																																																																																																																																																																																																																																																																																																																																												
TABLE R507.6																																																																																																																																																																																																																																																																																																																																																																																																																																												

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		

Sub Code:

MAXIMUM DECK JOIST SPANS

TABLE R507.6
MAXIMUM DECK JOIST SPANS

LOAD ^a (psf)	JOIST SPECIES ^b	JOIST SIZE	ALLOWABLE JOIST SPAN ^{3,c}				MAXIMUM CANTILEVER ^{2,d}										
			(feet-inches)				(feet-inches)										
			Joist Spacing				Adjacent Joist Back Span ^e										
			(inches)				(feet)										
40	Southern Pine	2x6	9-11	9-0	7-7	1-0	1-6	1-5	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x6	13-1	11-10	9-8	1-0	1-6	2-0	2-6	2-3	NP	NP	NP	NP	NP	NP	NP
		2x10	16-2	14-0	11-5	1-0	1-6	2-0	2-6	3-0	3-4	3-4	NP	NP	NP	NP	NP
	Douglas fir-larch ⁴	2x12	16-0	16-6	13-6	1-0	1-6	2-0	2-6	3-0	3-6	4-0	4-1	NP	NP	NP	NP
		2x6	9-6	8-4	6-10	1-0	1-6	1-4	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x8	12-6	11-1	9-1	1-0	1-6	2-0	2-3	2-0	NP	NP	NP	NP	NP	NP	NP
	Hem-fir ⁵	2x10	15-8	13-7	11-1	1-0	1-6	2-0	2-6	3-0	3-3	NP	NP	NP	NP	NP	NP
		2x12	16-0	15-9	12-10	1-0	1-6	2-0	2-6	3-0	3-6	3-11	3-11	NP	NP	NP	NP
		2x6	8-10	8-0	6-10	1-0	1-4	1-1	NP	NP	NP	NP	NP	NP	NP	NP	NP
	Spruce-pine-fir ⁶	2x8	11-8	10-7	8-8	1-0	1-6	2-0	1-11	NP	NP	NP	NP	NP	NP	NP	NP
		2x10	14-11	13-0	10-7	1-0	1-6	2-0	2-6	3-0	2-9	NP	NP	NP	NP	NP	NP
		2x12	17-5	15-1	12-4	1-0	1-6	2-0	2-6	3-0	3-6	3-8	NP	NP	NP	NP	NP
50	Southern Pine	2x6	9-2	6-4	7-4	1-0	1-6	1-5	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x8	12-1	11-0	9-7.5	1-0	1-6	2-0	2-5	2-3	NP	NP	NP	NP	NP	NP	NP
		2x10	15-5	14-13.9	10-11.3	1-0	1-6	2-0	2-6	3-0	3-1	NP	NP	NP	NP	NP	NP
	Douglas fir-larch ⁴	2x12	16-0	17-16.2	14-13.2	1-0	1-6	2-0	2-6	3-0	3-6	3-10	3-10	NP	NP	NP	NP
		2x6	8-10	8-0	7-6.6	1-0	1-6	1-4	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x8	11-7	10-7	9-8.11	1-0	1-6	2-0	2-3	NP	NP	NP	NP	NP	NP	NP	NP
	Hem-fir ⁵	2x10	14-10	13-13.3	10-10.10	1-0	1-6	2-0	2-6	3-0	3-0	NP	NP	NP	NP	NP	NP
		2x12	16-17.9	15-15.5	13-12.7	1-0	1-6	2-0	2-6	3-0	3-6	3-8	NP	NP	NP	NP	NP
		2x6	8-3	7-6	6-6.6	1-0	1-4	1-1	NP	NP	NP	NP	NP	NP	NP	NP	NP
	Spruce-pine-fir ⁶	2x8	10-10	9-10	8-7.6	1-0	1-6	2-0	1-11	NP	NP	NP	NP	NP	NP	NP	NP
		2x10	13-10	12-7	10-10.5	1-0	1-6	2-0	2-6	2-9	NP	NP	NP	NP	NP	NP	NP
		2x12	16-10	15-14.9	12-12.1	1-0	1-6	2-0	2-6	3-0	3-5	3-5	NP	NP	NP	NP	NP
60	Southern Pine	2x6	8-8	7-10	6-10	1-0	1-6	1-5	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x8	11-5	10-4	9-8.0	1-0	1-6	2-0	2-4	NP	NP	NP	NP	NP	NP	NP	NP
		2x10	14-7	13-12.9	11-10.5	1-0	1-6	2-0	2-6	2-11	2-11	NP	NP	NP	NP	NP	
	Douglas fir-larch ⁴	2x12	17-17.3	16-15.0	14-12.3	1-0	1-6	2-0	2-6	3-0	3-6	3-7	NP	NP	NP	NP	NP
		2x6	8-4	7-6	6-7.2	1-0	1-6	1-4	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x8	10-11	9-11	8-8.3	1-0	1-6	2-0	2-2	NP	NP	NP	NP	NP	NP	NP	NP
	Hem-fir ⁵	2x10	13-11	12-12.4	11-10.0	1-0	1-6	2-0	2-6	2-10	NP	NP	NP	NP	NP	NP	NP
		2x12	17-16.6	16-14.3	14-11.6	1-0	1-6	2-0	2-6	3-0	3-5	3-5	NP	NP	NP	NP	NP
		2x6	7-9	7-0	6-2	1-0	1-4	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	Spruce-pine-fir ⁶	2x8	10-2	9-3	8-7.11	1-0	1-6	2-0	1-11	NP	NP	NP	NP	NP	NP	NP	NP
		2x10	13-0	12-11.9	10-9.7	1-0	1-6	2-0	2-6	2-7	NP	NP	NP	NP	NP	NP	NP
		2x12	16-15.9	14-13.8	12-11.2	1-0	1-6	2-0	2-6	3-0	3-2	NP	NP	NP	NP	NP	NP
70	Southern Pine	2x6	8-3	7-6	6-6.3	1-0	1-6	1-5	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x8	10-10	9-10	8-7.2	1-0	1-6	2-0	2-2	NP	NP	NP	NP	NP	NP	NP	NP
		2x10	13-13.9	12-11.11	10-9.9	1-0	1-6	2-0	2-6	2-9	NP	NP	NP	NP	NP	NP	NP
	Douglas fir-larch ⁴	2x12	16-16.2	15-14.0	13-11.5	1-0	1-6	2-0	2-6	3-0	3-5	3-5	NP	NP	NP	NP	NP
		2x6	7-11	7-7.1	6-5.9	1-0	1-6	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x8	10-5	9-5	8-7.8	1-0	1-6	2-0	2-1	NP	NP	NP	NP	NP	NP	NP	NP
	Hem-fir ⁵	2x10	13-3	12-11.6	10-8.5	1-0	1-6	2-0	2-6	2-8	NP	NP	NP	NP	NP	NP	NP
		2x12	16-15.5	14-13.4	12-10.11	1-0	1-6	2-0	2-6	3-0	3-3	3-3	NP	NP	NP	NP	NP
		2x6	7-4	6-8	5-10	1-0	1-4	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
	Spruce-pine-fir ⁶	2x8	9-8	8-10	7-7.4	1-0	1-6	1-11	NP	NP	NP	NP	NP	NP	NP	NP	NP
		2x10	12-4	11-11.0	9-9.0	1-0	1-6	2-0	2-6	2-6	NP	NP	NP	NP	NP	NP	NP
		2x12	15-14.9	14-12.9	12-10.5	1-0	1-6	2-0	2-6	2-3.0	3-0	NP	NP	NP	NP	NP	NP

For S1: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg. NP = Not Permitted

- a. Dead load = 10 psf. Snow load not assumed to be concurrent with live load.
- b. No. 2 grade, wet service factor included.
- c. L/Δ = 360 at main span.
- d. L/Δ = 180 at cantilever with 220-pound point load applied to end.
- e. Includes incising factor.

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																																																																																																																																																				
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Sub Code:																																																																																																																																																										
	<p>f. Incising factor not included. g. Interpolation permitted. Extrapolation is not permitted.</p> <p style="text-align: center;">TABLE R507.9.1.3(1) DECK LEDGER CONNECTION TO BAND JOIST</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="3">LOAD ^c (psf)</th> <th rowspan="3">JOIST SPAN ^a (feet)</th> <th colspan="3">On-CENTER SPACING OF FASTENERS ^b (inches)</th> </tr> <tr> <th>¹/₂-inch diameter lag screw with ¹/₂-inch maximum sheathing ^{d,e}</th> <th>¹/₂-inch diameter bolt with ¹/₂-inch maximum sheathing ^e</th> <th>¹/₂-inch diameter bolt with 1-inch maximum sheathing ^f</th> </tr> </thead> <tbody> <tr> <td>40</td> <td>6</td> <td>30</td> <td>36</td> <td>36</td> </tr> <tr> <td></td> <td>8</td> <td>23</td> <td>36</td> <td>36</td> </tr> <tr> <td></td> <td>10</td> <td>18</td> <td>34</td> <td>29</td> </tr> <tr> <td>Live</td> <td>12</td> <td>15</td> <td>29</td> <td>24</td> </tr> <tr> <td></td> <td>14</td> <td>13</td> <td>24</td> <td>21</td> </tr> <tr> <td>Load</td> <td>16</td> <td>11</td> <td>21</td> <td>18</td> </tr> <tr> <td></td> <td>18</td> <td>10</td> <td>19</td> <td>16</td> </tr> <tr> <td>50</td> <td>6</td> <td>29</td> <td>36</td> <td>36</td> </tr> <tr> <td></td> <td>8</td> <td>22</td> <td>36</td> <td>35</td> </tr> <tr> <td>Ground</td> <td>10</td> <td>17</td> <td>33</td> <td>28</td> </tr> <tr> <td></td> <td>12</td> <td>14</td> <td>27</td> <td>23</td> </tr> <tr> <td>Snow</td> <td>14</td> <td>12</td> <td>23</td> <td>20</td> </tr> <tr> <td>Load</td> <td>16</td> <td>11</td> <td>20</td> <td>17</td> </tr> <tr> <td></td> <td>18</td> <td>9</td> <td>18</td> <td>15</td> </tr> <tr> <td>60</td> <td>6</td> <td>25</td> <td>36</td> <td>36</td> </tr> <tr> <td></td> <td>8</td> <td>18</td> <td>35</td> <td>30</td> </tr> <tr> <td>Ground</td> <td>10</td> <td>28 ^{+7 15}</td> <td>28 ^{+8 28}</td> <td>24 ^{+8 24}</td> </tr> <tr> <td></td> <td>12</td> <td>24 ^{+4 12}</td> <td>23 ^{+7 23}</td> <td>20 ^{+8 20}</td> </tr> <tr> <td>Snow</td> <td>14</td> <td>20 ^{+2 10}</td> <td>20 ^{+8 20}</td> <td>17 ^{+8 17}</td> </tr> <tr> <td>Load</td> <td>16</td> <td>17 ^{+1 9}</td> <td>17 ^{+8 17}</td> <td>15 ^{+7 15}</td> </tr> <tr> <td></td> <td>18</td> <td>15 ^{+8 8}</td> <td>15 ^{+8 15}</td> <td>13 ^{+5 13}</td> </tr> <tr> <td>70</td> <td>6</td> <td>22</td> <td>36</td> <td>35</td> </tr> <tr> <td></td> <td>8</td> <td>16</td> <td>31</td> <td>26</td> </tr> <tr> <td>Ground</td> <td>10</td> <td>13</td> <td>25</td> <td>21</td> </tr> <tr> <td></td> <td>12</td> <td>11</td> <td>20</td> <td>17</td> </tr> <tr> <td>Snow</td> <td>14</td> <td>9</td> <td>17</td> <td>15</td> </tr> <tr> <td>Load</td> <td>16</td> <td>8</td> <td>15</td> <td>13</td> </tr> <tr> <td></td> <td>18</td> <td>7</td> <td>13</td> <td>11</td> </tr> </tbody> </table> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.</p> <p>a. Interpolation permitted. Extrapolation is not permitted. b. Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist. c. Dead Load = 10 psf. Snow load shall not be assumed to act concurrently with live load. d. The tip of the lag screw shall fully extend beyond the inside face of the band joist.</p>	LOAD ^c (psf)	JOIST SPAN ^a (feet)	On-CENTER SPACING OF FASTENERS ^b (inches)			¹ / ₂ -inch diameter lag screw with ¹ / ₂ -inch maximum sheathing ^{d,e}	¹ / ₂ -inch diameter bolt with ¹ / ₂ -inch maximum sheathing ^e	¹ / ₂ -inch diameter bolt with 1-inch maximum sheathing ^f	40	6	30	36	36		8	23	36	36		10	18	34	29	Live	12	15	29	24		14	13	24	21	Load	16	11	21	18		18	10	19	16	50	6	29	36	36		8	22	36	35	Ground	10	17	33	28		12	14	27	23	Snow	14	12	23	20	Load	16	11	20	17		18	9	18	15	60	6	25	36	36		8	18	35	30	Ground	10	28 ^{+7 15}	28 ^{+8 28}	24 ^{+8 24}		12	24 ^{+4 12}	23 ^{+7 23}	20 ^{+8 20}	Snow	14	20 ^{+2 10}	20 ^{+8 20}	17 ^{+8 17}	Load	16	17 ^{+1 9}	17 ^{+8 17}	15 ^{+7 15}		18	15 ^{+8 8}	15 ^{+8 15}	13 ^{+5 13}	70	6	22	36	35		8	16	31	26	Ground	10	13	25	21		12	11	20	17	Snow	14	9	17	15	Load	16	8	15	13		18	7	13	11					
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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
	e. Sheathing shall be wood structural panel or solid sawn lumber. f. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard, lumber or foam sheathing. Up to 1/2-inch thickness of stacked washers shall be permitted to substitute for up to 1/2 inch of allowable sheathing thickness where combined with wood structural panel or lumber sheathing.					
RB185-19	R312.1.4 Exterior Plastic Composite guards. Plastic composite exterior Exterior guards shall comply with the requirements of Section R507.10 R317.4 .			X	\$1 /Sqft.	Clarification enhancing safety
RB186-19	TABLE R507.2.3 FASTENER AND CONNECTOR SPECIFICATIONS FOR DECKS^{a, b} The modification restores rivets and puts in the term 'glulam' to be consistent with the term used in ASTM F1667. Adding the Class D is appropriate for this product. (Vote: 11-0)		X			Restores rivets and puts in the term 'glulam' for consistency with the term used in ASTM F1667.
RB187-19	R507.3 Footings. Decks shall be supported on concrete footings or other approved structural systems designed to accommodate all loads in accordance with Section R301. Deck footings shall be sized to carry the imposed loads from the deck structure to the ground as shown in Figure R507.3. The footing depth shall be in accordance with Section R403.1.4. Exceptions: 1. <u>Footings shall not be required for free</u> Free -decks consisting of joists directly supported on grade over their entire length. 2. <u>Footings shall not be required for freestanding decks that meet all of the following criteria:</u> 2.1. <u>The joists bear directly on precast concrete pier blocks at grade without support by beams or posts,</u> 2.2. <u>The area of the deck does not exceed 200 square feet,</u> 2.3. <u>The walking surface is not more than 20 inches above grade at any point within 36 inches measured horizontally from the edge.</u> R507.3.2 Minimum depth. Deck footings shall extend below the frost line specified in Table R301.2(1) in accordance with Section R403.1.4.1. <u>Deck footings shall be placed not less than 12 inches below the undisturbed ground surface.</u> Exceptions: 1. Free-standing decks that meet all of the following criteria: 1.1. The joists bear directly on precast concrete pier blocks at grade without support by beams or posts. 1.2. The area of the deck does not exceed 200 square feet (18.9 m²).		X			Reorganization to add clarity to the code requirements

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Sub Code:						
	<p>1.3. The walking surface is not more than 20 inches (616 mm) above grade at any point within 36 inches (914 mm) measured horizontally from the edge.</p> <p>2. Free-standing decks need not be provided with footings that extend below the frost line.</p> <p>R507.3.3 Frost protection. Where decks are attached to a frost protected structure, deck footings shall be protected from frost by one or more of the following methods:</p> <ol style="list-style-type: none"> 1. <u>By extending below the frost line specified in Table R301.2(1).</u> 2. <u>By erecting on solid rock.</u> 3. <u>Other approved methods of frost protection.</u> <p>R403.1.4 Minimum depth. Exterior footings shall be placed not less than 12 inches (305 mm) below the undisturbed ground surface. Where applicable, the depth of footings shall also conform to Sections R403.1.4.1 through R403.1.4.2. <u>Deck footings shall be in accordance with Section R507.3.</u></p> <p>R403.1.4.1 Frost protection. Except where otherwise protected from frost, foundation walls, piers and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:</p> <ol style="list-style-type: none"> 1. Extended below the frost line specified in Table R301.2.(1). 2. Constructed in accordance with Section R403.3. 3. Constructed in accordance with ASCE 32. 4. Erected on solid rock. <p>Footings shall not bear on frozen soil unless the frozen condition is permanent.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Protection of free-standing <i>accessory structures</i> with an area of 600 square feet (56 m²) or less, of light-frame construction, with an eave height of 10 feet (3048 mm) or less shall not be required. 2. Protection of free-standing <i>accessory structures</i> with an area of 400 square feet (37 m²) or less, of other than light-frame construction, with an eave height of 10 feet (3048 mm) or less shall not be required. 3. Decks not supported by a dwelling need not be provided with footings that extend below the frost line. 					
RB188-19	<p>R507.5 Deck Beams. Maximum allowable spans for wood deck beams, as shown in Figure R507.5, shall be in accordance with Table R507.5. Beam plies shall be fastened <u>together</u> with two rows of 10d (3-inch × 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the allowable beam span. Deck beams of other materials shall be</p>		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE													
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	permitted where designed in accordance with accepted engineering practices.																		
RB189-19	R507.5 Deck Beams. Maximum allowable spans for wood deck beams, as shown in Figure R507.5, shall be in accordance with Table R507.5. Beam plies shall be fastened with two rows of 10d (3-inch × 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the allowable <u>actual</u> beam span. Deck beams of other materials shall be permitted where designed in accordance with accepted engineering practices.			X		Clarification													
RB190-19	<p style="text-align: center;">TABLE R507.5 DECK BEAM SPAN LENGTHS^{a, b, c} (feet— inches)</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.</p> <p>a. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied at the end.</p> <p>b. Beams supporting deck joists from one side only.</p> <p>c. No. 2 grade, wet service factor.</p> <p>d. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.</p> <p>e. Includes incising factor.</p> <p>f. Northern species. Incising factor not included.</p> <p>g. Beam cantilevers are limited to the adjacent beam’s span/4.</p> <p>h. <u>For calculation of effective deck joist span, the actual joist span length shall be multiplied by the joist span factor from the following table.</u></p> <p>i.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>C/J</u></th> <th style="text-align: left;"><u>Joist span factor</u></th> </tr> </thead> <tbody> <tr> <td>0 (no cantilever)</td> <td>0.66</td> </tr> <tr> <td>1/12 (0.87)</td> <td>0.72</td> </tr> <tr> <td>1/10 (0.10)</td> <td>0.80</td> </tr> <tr> <td>1/8 (0.125)</td> <td>0.84</td> </tr> <tr> <td>1/6 (0.167)</td> <td>0.90</td> </tr> <tr> <td>1/4 (0.250)</td> <td>1.00</td> </tr> </tbody> </table> <p><u>J = actual joist span length (feet)</u> <u>C = actual joist cantilever length (feet)</u></p>	<u>C/J</u>	<u>Joist span factor</u>	0 (no cantilever)	0.66	1/12 (0.87)	0.72	1/10 (0.10)	0.80	1/8 (0.125)	0.84	1/6 (0.167)	0.90	1/4 (0.250)	1.00	X		Minimal depending on cantilever	Clarification
<u>C/J</u>	<u>Joist span factor</u>																		
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		Decrease	None	Increase													
Sub Code:																	
RB191-19	<p>R507.7 Decking. Maximum allowable spacing for joists supporting <u>wood decking, excluding stairways</u>, shall be in accordance with Table R507.7. Wood decking shall be attached to each supporting member with not less than two 8d threaded nails or two No. 8 wood screws. <u>Maximum allowable spacing for joists supporting plastic composite decking shall be in accordance with Section R507.2.</u> Other approved decking or fastener systems shall be installed in accordance with the manufacturer's installation requirements.</p> <p style="text-align: center;">TABLE R507.7 MAXIMUM JOIST SPACING FOR WOOD DECKING</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.01745 rad.</p> <p>a. Maximum angle of 45 degrees from perpendicular for wood deck boards.</p> <p>b. <u>Or other maximum span provided by an accredited lumber grading or inspection agency.</u></p> <p>c. <u>Individual wood deck boards supported by two joists shall be considered <i>single span</i> and three or more joists shall be considered <i>multi-span</i>.</u></p>	X			Minimal	Clarification											
RB192-19	<p>R507.9.1.2 Band joist details. Band joists supporting a ledger shall be a minimum 2-inch-nominal (51 mm), solid-sawn, spruce-pine-fir or better lumber or a minimum 1-inch by 9³/₂ 2-inch (25 mm x 241 mm) dimensional, Douglas fir or better, laminated veneer lumber. mm) nominal engineered wood rim boards in accordance with Section R502.1.7. Band joists shall bear fully on the primary structure capable of supporting all required loads.</p>		X			Clarification											
RB193-19	<p style="text-align: center;">TABLE R602.3(1) FASTENING SCHEDULE</p> <p>Adds language to footnote a in order to clarify that the table pertains to carbon steel fasteners and connections and clarifies that the code change, as approved by the CAH, deletes stainless steel nails and staples from the table. The added language is proposed because if is feared that users of the code will easily miss this change, and not necessarily understand that stainless steel (or other materials) may not perform the same as carbon steel. These other materials may require differences in deign to achieve equivalent performance.</p>		X			Clarifies that table pertains to carbon steel fasteners and connections and that code change deletes stainless steel nails & staples											
RB194-19	<p style="text-align: center;">TABLE R602.3(1) FASTENING SCHEDULE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">ITEM</th> <th style="width: 20%;">DESCRIPTION OF BUILDING LEMENTS</th> <th style="width: 40%;">NUMBER AND TYPE OF FASTENER^{a, b, c}</th> <th style="width: 30%;">SPACING AND LOCATION</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">Wall</td> </tr> <tr> <td style="text-align: center;">12</td> <td>Adjacent full-height stud to end of header</td> <td>4-16d box (3 1/2' x 0.135"; or 3-16d common (3 1/2" x 0.162"); or 4-10d box (3" x 0.128"); or 4 - 3" x 0.131" nails</td> <td>End nail</td> </tr> </tbody> </table>	ITEM	DESCRIPTION OF BUILDING LEMENTS	NUMBER AND TYPE OF FASTENER ^{a, b, c}	SPACING AND LOCATION	Wall				12	Adjacent full-height stud to end of header	4-16d box (3 1/2' x 0.135"; or 3-16d common (3 1/2" x 0.162"); or 4-10d box (3" x 0.128"); or 4 - 3" x 0.131" nails	End nail		X		Clarification
ITEM	DESCRIPTION OF BUILDING LEMENTS	NUMBER AND TYPE OF FASTENER ^{a, b, c}	SPACING AND LOCATION														
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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact						
CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	R602.7.5 Supports for headers. Headers shall be supported on each end with one or more jack studs or with approved framing anchors in accordance with Table R602.7(1) or R602.7(2). The full-height stud adjacent to each end of the header shall be end nailed to each end of the header with four 16d nails (3.5 inches x 0.135 inches). <u>in accordance with Table R602.3(1).</u> The minimum number of full-height studs at each end of a header shall be in accordance with Table R602.7.5.					
RB195-19	<p style="text-align: center;">TABLE R602.3(1) FASTENING SCHEDULE</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 ksi = 6.895 MPa.</p> <p>g. Gypsum sheathing shall conform to ASTM C1396 and shall be installed in accordance with GA 253 <u>or ASTM C1280</u>. Fiberboard sheathing shall conform to ASTM C208.</p> <p>ASTM <u>C1280-18: Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing</u></p>		X			ASTM C1280 provided additional construction options.
RB196-19	<p style="text-align: center;">TABLE R602.3(1) FASTENING SCHEDULE</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1 ksi = 6.895 MPa.</p> <p>f. For wood structural panel roof sheathing attached to gable end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 4 inches on center where the ultimate design wind speed is greater than 130 mph in Exposure B or greater than 110 mph in Exposure C.</p>			X		Clarification
RB197-19	<p style="text-align: center;">TABLE R602.3(2) ALTERNATE ATTACHMENTS TO TABLE R602.3(1)</p> <p>For SI: 1 inch = 25.4 mm.</p> <p>a. Nail is a general description and shall be permitted to be T-head, modified round head or round head.</p> <p>b. Staples shall have a minimum crown width of 7/16-inch or diameter except as noted.</p> <p>c. Nails or staples shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Nails or staples shall be spaced at not more than 12 inches on center at intermediate supports for floors.</p> <p>d. Fasteners shall be placed in a grid pattern throughout the body of the panel.</p> <p>e. For 5-ply panels, intermediate nails shall be spaced not more than 12 inches on center each way.</p> <p>f. Hardboard underlayment shall conform to CPA/ANSI A135.4</p>		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
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	<p>g. Specified alternate attachments for roof sheathing shall be permitted where the ultimate design wind speed is less than 130 mph. Fasteners attaching wood structural panel roof sheathing to gable end wall framing shall be installed using the spacing listed for panel edges.</p> <p>h. Fiber-cement underlayment shall conform to ASTM C1288 or ISO 8336, Category C.</p>					
RB198-19	<p style="text-align: center;">TABLE R602.3(2) ALTERNATE ATTACHMENTS TO TABLE R602.3(1) <i>(Portions of table and footnotes not shown remain unchanged)</i></p> <p>g. <u>Alternate fastening is only permitted for roof sheathing where</u> Where the ultimate design wind speed is less than or equal to 110 mph, and roof sheathing attachment using the specified alternate fasteners shall be permitted where fasteners are installed 3 inches on center at all supports.</p>			X	Minimal	Clarification
RB199-19	<p>R602.10.1.2 Location of braced wall lines and permitted offsets. <u>Each braced wall line shall be located such that no more than two-thirds of the required braced wall panel length is located to one side of the braced wall line. Braced wall panels shall be permitted to be offset up to four feet from the designated braced wall line.</u> Where braced wall panels along a braced wall line fall in a single line, the braced wall line shall be located at those braced wall panels. Where braced wall panels are offset out of plane, the braced wall line shall be located at or between the braced wall panels, and the braced wall line shall not be located outboard or inboard of all the braced wall panels in that braced wall line. Where 2/3 or more of the length of braced wall panels in a braced wall line fall in a single line, the braced wall line shall be located at those braced wall panels; or the braced wall line shall be located at the centroid of the braced wall panels, as seen in Figure R602.10.1.1. Exterior braced wall panels parallel to a <i>braced wall line</i> shall be offset not more than 4 feet (1219 mm) from the designated <i>braced wall line</i> location as shown in Figure R602.10.1.1. Exterior walls parallel to a <i>braced wall line</i> shall be offset not more than 4 feet (1219 mm) from the designated <i>braced wall line</i> location as shown in Figure R602.10.1.1. Interior walls used as bracing shall be offset not more than 4 feet (1219 mm) from a <i>braced wall line</i> through the interior of the building as shown in Figure R602.10.1.1.</p>		X		Clarification	
RB200-19	<p>R602.10.2.2 Locations of braced wall panels. A <i>braced wall panel</i> shall begin within 10 feet (3810 mm) from each end of a <i>braced wall line</i> as determined in Section R602.10.1.1. The distance between adjacent edges of <i>braced wall panels</i> along a <i>braced wall line</i> shall be not greater than 20 feet (6096 mm) as shown in Figure R602.10.2.2.</p> <p>Exceptions:</p>		X		Clarification	

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

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	<p>1. <u>Braced wall panels in Seismic Design Categories D0, D1, and D2 shall comply with Section R602.10.2.2.1.</u></p> <p>2. <u>Braced wall panels with continuous sheathing in Seismic Design Categories A, B, or C shall comply with Section R602.10.7.</u></p> <p>R602.10.2.2.1 Location of braced wall panels in Seismic Design Categories D0, D1 and D2. Braced wall panels shall be located at each end of a braced wall line.</p> <p>Exception Exceptions:</p> <p>1. Braced wall panels constructed of Method WSP or BV-WSP and continuous sheathing methods as specified in Section R602.10.4 shall be permitted to begin not more than 10 feet (3048 mm) from each end of a braced wall line provided that each end complies with one of the following:</p> <p>1.1. A minimum 24-inch-wide (610 mm) panel for Methods WSP, CS-WSP, CS-G and CS-PF is applied to each side of the building corner as shown in End Condition 4 of Figure R602.10.7.</p> <p>2.1.2. The end of each braced wall panel closest to the end of the braced wall line shall have an 1,800 lb (8 kN) hold-down device fastened to the stud at the edge of the braced wall panel closest to the corner and to the foundation or framing below as shown in End Condition 5 of Figure R602.10.7.</p> <p>2. <u>Braced wall panels constructed of Method PFH or ABW, or of Method BV-WSP where a hold-down is provided in accordance with Table R602.10.6.5, shall be permitted to begin not more than 10 feet from each end of a braced wall line.</u></p>					
RB201-19	<p style="text-align: center;">TABLE R602.10.3(2)</p> <p style="text-align: center;">WIND ADJUSTMENT FACTORS TO THE REQUIRED LENGTH OF WALL BRACING</p> <p style="text-align: center;">TABLE R602.10.3(4)</p> <p style="text-align: center;">SEISMIC ADJUSTMENT FACTORS TO THE REQUIRED LENGTH OF WALL BRACING</p> <p>Committee Reason: The modifications removed the proposed options for SFB and HPS products because the products are too soft for bracing without uniform nailing and blocking. The proposal appropriately adds for PBS as an additional design option.</p>			X	Minimal	Modifications remove option for SFB and HPS products because the products are too soft for bracing without uniform nailing and blocking

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

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RB202-19	<p style="text-align: center;">TABLE R602.10.3(3)</p> <p>BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa. NP = Not Permitted.</p> <ul style="list-style-type: none"> a. Linear interpolation shall be permitted. b. Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the S_{ds} values associated with the seismic design categories shall be permitted when a site-specific S_{ds} value is determined in accordance with Section 1613.2 of the International Building Code. c. Where the braced wall line length is greater than 50 feet, braced wall lines shall be permitted to be divided into shorter segments having lengths of 50 feet or less, and the amount of bracing within each segment shall be in accordance with this table. d. Method LIB shall have gypsum board fastened to not less than one side with nails or screws in accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches. e. Methods PFG and CS-SFB do not apply in Seismic Design Categories D_0, D_1 and D_2. f. Where more than one bracing method is used, mixing methods shall be in accordance with Section R602.10.4.1. 	X				Clarification
RB203-19	<p style="text-align: center;">TABLE R602.10.3(3)</p> <p>BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa. NP = Not Permitted.</p> <ul style="list-style-type: none"> a. Linear interpolation shall be permitted. b. Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the S_{ds} values associated with the seismic design categories shall be permitted when a site-specific S_{ds} value is determined in accordance with Section 1613.2 of the International Building Code. c. Where the braced wall line length is greater than 50 feet, braced wall lines shall be permitted to be divided into shorter segments having lengths of 50 feet or less, and the amount of bracing within each segment shall be in accordance with this table. d. Method LIB shall have gypsum board fastened to not less than one side with nails or screws in accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches. e. Methods PFG and CS-SFB do not apply in Seismic Design Categories D_0, D_1 and D_2. f. <u>Methods PFH, PFG and ABW are only permitted on a single story or a first of two stories.</u> g. Where more than one bracing method is used, mixing methods shall be in accordance with Section R602.10.4.1. 	X				Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

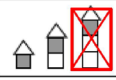
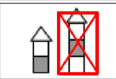
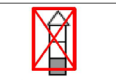
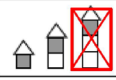
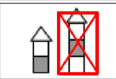
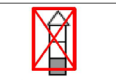
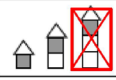
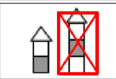
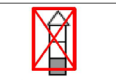
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RB204-19	<p style="text-align: center;">TABLE R602.10.3(3) BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY</p> <table border="1"> <thead> <tr> <th rowspan="2">Seismic Design Category</th> <th rowspan="2">Story Location</th> <th rowspan="2">Braced Wall Line Length(feet)²</th> <th rowspan="2">Method LIB^d</th> <th rowspan="2">Method GB</th> <th colspan="2">MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE^{e, f}</th> </tr> <tr> <th>Methods DWB, SFB, PBS, PCP, HPS, CS-SFB*</th> <th>Method WSP</th> <th>Methods CS-WSP, CS-G, CS-PF</th> </tr> </thead> <tbody> <tr> <td rowspan="15">D₂^g</td> <td rowspan="5"></td> <td>10</td> <td>NP</td> <td>4.0</td> <td>4.0</td> <td>2.5</td> <td>2.1</td> </tr> <tr> <td>20</td> <td>NP</td> <td>8.0</td> <td>8.0</td> <td>5.0</td> <td>4.3</td> </tr> <tr> <td>30</td> <td>NP</td> <td>12.0</td> <td>12.0</td> <td>7.5</td> <td>6.4</td> </tr> <tr> <td>40</td> <td>NP</td> <td>16.0</td> <td>16.0</td> <td>10.0</td> <td>8.5</td> </tr> <tr> <td>50</td> <td>NP</td> <td>20.0</td> <td>20.0</td> <td>12.5</td> <td>10.6</td> </tr> <tr> <td rowspan="5"></td> <td>10</td> <td>NP</td> <td>7.5</td> <td>7.5</td> <td>5.5</td> <td>4.7</td> </tr> <tr> <td>20</td> <td>NP</td> <td>15.0</td> <td>15.0</td> <td>11.0</td> <td>9.4</td> </tr> <tr> <td>30</td> <td>NP</td> <td>22.5</td> <td>22.5</td> <td>16.5</td> <td>14.0</td> </tr> <tr> <td>40</td> <td>NP</td> <td>30.0</td> <td>30.0</td> <td>22.0</td> <td>18.7</td> </tr> <tr> <td>50</td> <td>NP</td> <td>37.5</td> <td>37.5</td> <td>27.5</td> <td>23.4</td> </tr> <tr> <td rowspan="5"> Three-story dwelling</td> <td>10</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>20</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>30</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>40</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td>50</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> </tr> <tr> <td rowspan="5">Cripple wall below one- or two-story dwelling</td> <td>10</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>7.5</td> <td>6.4</td> </tr> <tr> <td>20</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>15.0</td> <td>12.8</td> </tr> <tr> <td>30</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>22.5</td> <td>19.1</td> </tr> <tr> <td>40</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>30.0</td> <td>25.5</td> </tr> <tr> <td>50</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>37.5</td> <td>31.9</td> </tr> </tbody> </table> <p><small>g. One- and two-family dwellings in Seismic Design Category D₂ exceeding two stories shall be designed in accordance with accepted engineering practice.</small></p> <p style="text-align: center;">TABLE R602.10.3(4) SEISMIC ADJUSTMENT FACTORS TO THE REQUIRED LENGTH OF WALL BRACING</p> <p>For SI: 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.</p> <ol style="list-style-type: none"> Linear interpolation shall be permitted. The total length of bracing required for a given wall line is the product of all applicable adjustment factors. The length-to-width ratio for the floor/roof diaphragm shall not exceed 3:1. Applies to stone or masonry veneer exceeding the first story height. The adjustment factor for stone or masonry veneer shall be applied to all exterior braced wall lines and all braced wall lines on the interior of the building, backing or perpendicular to and laterally supporting veneered walls. See Section R602.10.6.5 for requirements where stone or masonry veneer does not exceed the first-story height. <u>One- and two-family dwellings in Seismic Design Category D₂ exceeding two stories shall be designed in accordance with accepted engineering practice.</u> 	Seismic Design Category	Story Location	Braced Wall Line Length(feet) ²	Method LIB ^d	Method GB	MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE ^{e, f}		Methods DWB, SFB, PBS, PCP, HPS, CS-SFB*	Method WSP	Methods CS-WSP, CS-G, CS-PF	D ₂ ^g		10	NP	4.0	4.0	2.5	2.1	20	NP	8.0	8.0	5.0	4.3	30	NP	12.0	12.0	7.5	6.4	40	NP	16.0	16.0	10.0	8.5	50	NP	20.0	20.0	12.5	10.6		10	NP	7.5	7.5	5.5	4.7	20	NP	15.0	15.0	11.0	9.4	30	NP	22.5	22.5	16.5	14.0	40	NP	30.0	30.0	22.0	18.7	50	NP	37.5	37.5	27.5	23.4	 Three-story dwelling	10	NP	NP	NP	NP	NP	20	NP	NP	NP	NP	NP	30	NP	NP	NP	NP	NP	40	NP	NP	NP	NP	NP	50	NP	NP	NP	NP	NP	Cripple wall below one- or two-story dwelling	10	NP	NP	NP	7.5	6.4	20	NP	NP	NP	15.0	12.8	30	NP	NP	NP	22.5	19.1	40	NP	NP	NP	30.0	25.5	50	NP	NP	NP	37.5	31.9	X			Clarification
Seismic Design Category	Story Location						Braced Wall Line Length(feet) ²	Method LIB ^d	Method GB	MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE ^{e, f}																																																																																																																																		
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	<p style="text-align: center;">TABLE R602.10.6.5 METHOD BV-WSP WALL BRACING REQUIREMENTS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">SEISMIC DESIGN CATEGORY</th> <th rowspan="2">STORY</th> <th colspan="5">BRACED WALL LINE LENGTH (FEET)</th> <th rowspan="2">SINGLE-STORY HOLD-DOWN FORCE (pounds)^{b,c}</th> <th rowspan="2">CUMULATIVE HOLD-DOWN FORCE (pounds)^{b,c}</th> </tr> <tr> <th>10</th> <th>20</th> <th>30</th> <th>40</th> <th>50</th> </tr> </thead> <tbody> <tr> <td rowspan="3">D₂^a</td> <td>1</td> <td>5.5</td> <td>11.0</td> <td>16.5</td> <td>22.0</td> <td>27.5</td> <td>2300</td> <td></td> </tr> <tr> <td>2</td> <td>5.5</td> <td>11.0</td> <td>16.5</td> <td>22.0</td> <td>27.5</td> <td>3900</td> <td>6200</td> </tr> <tr> <td>3</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NP</td> <td>NA</td> <td>NA</td> </tr> </tbody> </table> <p style="font-size: small;">For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.479 kPa, 1 pound-force = 4.448 N. NP = Not Permitted. NA = Not Applicable.</p> <p style="font-size: x-small;">a. One- and two-family dwellings in Seismic Design Category D₂ exceeding two stories shall be designed in accordance with accepted engineering practice. b. Hold-down force is minimum allowable stress design load for connector providing uplift tie from wall framing at end of braced wall panel at the noted story to wall framing at end of braced wall panel at the story below, or to foundation or foundation wall. Use single-story hold-down force where edges of braced wall panels do not align; a continuous load path to the foundation shall be maintained. c. Where hold-down connectors from stories above align with stories below, use cumulative hold-down force to size middle- and bottom-story hold-down connectors.</p>	SEISMIC DESIGN CATEGORY	STORY	BRACED WALL LINE LENGTH (FEET)					SINGLE-STORY HOLD-DOWN FORCE (pounds) ^{b,c}	CUMULATIVE HOLD-DOWN FORCE (pounds) ^{b,c}	10	20	30	40	50	D ₂ ^a	1	5.5	11.0	16.5	22.0	27.5	2300		2	5.5	11.0	16.5	22.0	27.5	3900	6200	3	NP	NP	NP	NP	NP	NA	NA					
SEISMIC DESIGN CATEGORY	STORY			BRACED WALL LINE LENGTH (FEET)							SINGLE-STORY HOLD-DOWN FORCE (pounds) ^{b,c}	CUMULATIVE HOLD-DOWN FORCE (pounds) ^{b,c}																																	
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RB205-19	<p style="text-align: center;">TABLE R602.10.4 BRACING METHODS</p> <p>Reason: ASTM F1667-18 requires that when gage is used as a diameter for nails, a decimal equivalent must also be shown. This requirement was put in place because of the multiple and conflicting wire gage tables that are used in the manufacturing of nails.</p>	X			Clarification																																								
RB206-19	<p>R602.10.6.2 Method PFH: Portal frame with hold-downs. Method PFH braced wall panels shall be constructed in accordance with Figure R602.10.6.2.</p> <p style="text-align: center;">FIGURE R602.10.6.2 METHOD PFH—PORTAL FRAME WITH HOLD-DOWNS</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.</p>	X			Clarification																																								

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB207-19	<p>R602.10.6.4 Method CS-PF: Continuously sheathed portal frame. Continuously sheathed portal frame <i>braced wall panels</i> shall be constructed in accordance with Figure R602.10.6.4 and Table R602.10.6.4. The number of continuously sheathed portal frame panels in a single <i>braced wall line</i> shall not exceed four.</p> <p>R602.12.6.2 Method CS-PF. Braced wall panels constructed as Method CS-PF in accordance with Section R602.10.6.4 shall be permitted where all framed portions of all exterior walls are sheathed with wood structural panels. Each CS-PF panel shall equal 0.75 bracing units. Not more than four CS-PF panels shall be permitted on all segments of walls parallel to each side of the circumscribed rectangle. Segments of wall that include a Method CS-PF panel shall meet the requirements of Section R602.10.4.2.</p>		X			Clarification
RB208-19	<p>R602.10.6.5 Wall bracing for dwellings with stone and masonry veneer in Seismic Design Categories D₀, D₁ and D₂. <u>Townhouses in Seismic Design Categories D₀, D₁ and D₂ with stone or masonry veneer exceeding the first-story height shall be designed in accordance with accepted engineering practice.</u></p> <p><u>One- and two-family dwellings in Seismic Design Category D₂ exceeding two stories and having stone or masonry veneer shall be designed in accordance with accepted engineering practice.</u></p> <p>Where stone and masonry veneer are installed in accordance with Section R703.8, wall bracing on exterior <i>braced wall lines</i> and <i>braced wall lines</i> on the interior of the building, backing or perpendicular to and laterally supporting veneered walls shall comply with this section.</p> <p>Where dwellings in Seismic Design Categories D₀, D₁ and D₂ have stone or masonry veneer installed in accordance with Section R703.8, and the veneer does not exceed the first-story height, wall bracing shall be in accordance with Section R602.10.3.</p> <p>Where detached one- or two-family dwellings in Seismic Design Categories D₀, D₁ and D₂ have stone or masonry veneer installed in accordance with Section R703.8, and the veneer exceeds the first-story height, wall bracing at exterior <i>braced wall lines</i> and <i>braced wall lines</i> on the interior of the building shall be constructed using Method BV-WSP in accordance with this section and Figure R602.10.6.5. Cripple walls shall not be permitted, and required interior <i>braced wall lines</i> shall be supported on continuous foundations.</p> <p>Where detached one- or two-family <i>dwellings</i> in Seismic Design Categories D₀, D₁ and D₂ have exterior veneer installed in accordance with Section R703.8 and are braced in accordance with Method WSP or CS-WSP, veneer shall be permitted in the second story in accordance with Item 1 or 2, provided that the <i>dwelling</i> does not extend more than two stories above grade plane, the veneer does not exceed 5 inches (127 mm) in thickness, the height of veneer on gable-end walls does not extend more than 8 feet (2438 mm) above the bearing wall top plate</p>		X		Clarification	

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact						
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	<p>elevation, and the total length of <i>braced wall panel</i> specified by Table R602.10.3(3) is multiplied by 1.2 for each first- and second-story <i>braced wall line</i>.</p> <ol style="list-style-type: none"> 1. The total area of the veneer on the second-story exterior walls shall be permitted to extend up to 25 percent of the occupied second floor area. 2. The veneer on the second-story exterior walls shall be permitted to cover one side of the <i>dwelling</i>, including walls on bay windows and similar appurtenances within the one dwelling side. <p>Townhouses in Seismic Design Categories D₀, D₁ and D₂ with stone or masonry veneer exceeding the first-story height shall be designed in accordance with accepted engineering practice.</p>					
RB209-19	<p>Committee Modification:</p> <p>R602.10.6.5.1 Veneer on First Story Only. Where dwellings in Seismic Design Categories D₀, D₁ and D₂ have stone or masonry veneer installed in accordance with Section R703.8, and the veneer does not exceed the first-story height, wall bracing shall be in accordance with Section R602.10, exclusive of this section Section R602.10.6.5.</p>		X			Clarification
RB210-19	<p style="text-align: center;">TABLE R602.10.6.5 METHOD BV-WSP WALL BRACING REQUIREMENTS⁶</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.479 kPa, 1 pound-force = 4.448 N. NP = Not Permitted. NA = Not Applicable.</p> <ol style="list-style-type: none"> a. Hold-down force is minimum allowable stress design load for connector providing uplift tie from wall framing at end of braced wall panel at the noted story to wall framing at end of braced wall panel at the story below, or to foundation or foundation wall. Use single-story hold-down force where edges of braced wall panels do not align; a continuous load path to the foundation shall be maintained. b. Where hold-down connectors from stories above align with stories below, use cumulative hold-down force to size middle- and bottom-story hold-down connectors. c. <u>Interpolation between braced wall lengths is permitted.</u> 		X			Clarification
RB211-19	<p>R602.10.10.1 Cripple wall bracing for Seismic Design Categories D₀ and D₁ and townhouses in Seismic Design Category C. In addition to the requirements in Section R602.10.10, <u>cripple wall bracing shall be limited to methods WSP and CS-WSP, and the distance between adjacent edges of braced wall panels for cripple walls along a braced wall line shall be 14 feet (4267 mm) maximum.</u></p>			X	Minimal	Clarification

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact						
CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	Where <i>braced wall lines</i> at interior walls are not supported on a continuous foundation below, the adjacent parallel cripple walls, where provided, shall be braced with Method WSP or Method CS-WSP in accordance with Section R602.10.4. The length of bracing required in accordance with Table R602.10.3(3) for the cripple walls shall be multiplied by 1.5. Where the cripple walls do not have sufficient length to provide the required bracing, the spacing of panel edge fasteners shall be reduced to 4 inches (102 mm) on center and the required bracing length adjusted by 0.7. If the required length can still not be provided, the cripple wall shall be designed in accordance with accepted engineering practice.					
RB213-19	R608.1 General. Exterior concrete walls shall be designed and constructed in accordance with the provisions of this section or in accordance with the provisions of PCA 100, ACI 318, or ACI 332. Where PCA 100, ACI 318, ACI 332 or the provisions of this section are used to design concrete walls, project drawings, typical details and specifications are not required to bear the seal of the architect or engineer responsible for design, unless otherwise required by the state law of the jurisdiction having authority. R608.5.1 Concrete and materials for concrete. Materials used in concrete, and the concrete itself, shall conform to requirements of this section, PCA 100, or ACI 318, <u>or</u> ACI 332.		X			Clarification
RB214-19	R609.1 General. This section prescribes performance and construction requirements for exterior windows and doors installed in walls. Windows and doors shall be installed anchored <u>installed</u> in accordance with the fenestration manufacturer's written installation instructions. Section R609.7. Window and door openings shall be flashed in accordance with Section R703.4. Written installation <u>installation</u> instructions shall be provided by the fenestration manufacturer for each window or door.	X			Minimal	Clarification
RB215-19	R609.4 Garage doors. Garage doors shall be tested in accordance with either ASTM E330 or ANSI/DASMA 108, and shall meet the acceptance <u>pass/fail</u> criteria of ANSI/DASMA 108. R609.4.1 Garage door labeling. Garage doors shall have <u>be labeled with</u> a permanent label <u>provided by the garage door manufacturer.</u> The label shall identify <u>identifying</u> the garage door manufacturer, the garage door model/series number, the positive and negative design wind pressure rating, the installation instruction drawing reference number, and the applicable test standard.			X	Minimal	Clarification
RB216-19	TABLE R702.3.5 MINIMUM THICKNESS AND APPLICATION OF GYPSUM BOARD AND GYPSUM PANEL PRODUCTS <i>(portions of the table and footnotes not shown remain unchanged)</i> c. Where cold-formed steel framing is used with a clinching design to receive nails by two edges of metal, the nails shall be not less than ⁵ / ₈ inch longer than the gypsum board or gypsum panel product		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE																											
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Sub Code:																																	
	thickness and shall have ringed shanks. Where the cold-formed steel framing has a nailing groove formed to receive the nails, the nails shall have barbed shanks or be 5d, 13³/₂-gage, 0.086 inch diameter <u>1⁵/₈ inches long, ¹⁵/₆₄-inch head for 1/2-inch gypsum board or gypsum panel product; and 6d, 13-gage, 0.099 inch diameter <u>1⁷/₈ inches long, ¹⁵/₆₄-inch head for ⁵/₈-inch gypsum board or gypsum panel product.</u></u>																																
RB223-19	<p>R702.7 Vapor retarders. Vapor retarder materials shall be classified in accordance with Table R702.7(1). A vapor retarder shall be provided on the interior side of frame walls of the class indicated in Table R702.7(2), including compliance with Table R702.7(3) or Table R702.7(4) where applicable. An approved design using accepted engineering practice for hygrothermal analysis shall be permitted as an alternative. The climate zone shall be determined in accordance with Section N1101.7 (R301.1).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Basement walls. 2. Below-grade portion of any wall. 3. Construction where accumulation, condensation, or freezing of moisture will not damage the materials. 4. A vapor retarder shall not be required in Climate Zones 1, 2, and 3. <p style="text-align: center;">R702.7(2) VAPOR RETARDER OPTIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">CLIMATE ZONE</th> <th colspan="3">VAPOR RETARDER CLASS</th> </tr> <tr> <th>CLASS I^a</th> <th>CLASS II^a</th> <th>CLASS III</th> </tr> </thead> <tbody> <tr> <td>1,2</td> <td>Not Permitted</td> <td>Not Permitted</td> <td>Permitted</td> </tr> <tr> <td>3, 4 (except Marine 4)</td> <td>Not Permitted</td> <td>Permitted^c</td> <td>Permitted</td> </tr> <tr> <td>4 (except Marine 4)</td> <td>Not Permitted</td> <td>Permitted^e</td> <td rowspan="2">See Table R702.7(3)</td> </tr> <tr> <td>Marine 4, 5, 6, 7, 8</td> <td>Permitted^b</td> <td>Permitted^c</td> </tr> </tbody> </table> <p><i>(No further changes to the footnotes)</i></p> <p style="text-align: center;">TABLE R702.7(3) CLASS III VAPOR RETARDERS <i>(No further changes to the table or portion of the footnotes not shown)</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>CLIMATE ZONE</th> <th>CLASS III VAPOR RETARDERS PERMITTED FOR:^{a, b}</th> </tr> </thead> <tbody> <tr> <td rowspan="3" style="text-align: center;">E Marine 4</td> <td>Vented cladding over wood structural panels.</td> </tr> <tr> <td>Vented cladding over fiberboard.</td> </tr> <tr> <td>Vented cladding over gypsum.</td> </tr> </tbody> </table>	CLIMATE ZONE	VAPOR RETARDER CLASS			CLASS I ^a	CLASS II ^a	CLASS III	1,2	Not Permitted	Not Permitted	Permitted	3, 4 (except Marine 4)	Not Permitted	Permitted ^c	Permitted	4 (except Marine 4)	Not Permitted	Permitted ^e	See Table R702.7(3)	Marine 4, 5, 6, 7, 8	Permitted ^b	Permitted ^c	CLIMATE ZONE	CLASS III VAPOR RETARDERS PERMITTED FOR: ^{a, b}	E Marine 4	Vented cladding over wood structural panels.	Vented cladding over fiberboard.	Vented cladding over gypsum.	X			Clarification
CLIMATE ZONE	VAPOR RETARDER CLASS																																
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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY		IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
			Decrease	None	Increase		
Sub Code:							
		<p>Continuous insulation with R-value ≥ 2.5 over 2 x 4 wall.</p> <p>Continuous insulation with R-value ≥ 3.75 over 2 x 6 wall.</p> <p>a. Vented cladding shall include vinyl, polypropylene, or horizontal aluminum siding, or brick veneer with a clear airspace as specified in Table R703.8.4(1), <u>and</u> <u>or</u> other approved vented claddings.</p>					
RB230-19	<p>R702.7.3 Minimum clear airspaces and vented openings for vented cladding. For the purposes of this section, vented cladding shall include the following minimum clear airspaces. Other openings with the equivalent vent area shall be permitted.</p> <ol style="list-style-type: none"> 1. Vinyl polypropylene or horizontal aluminum siding applied over a weather-resistive barrier as specified in Table R703.3(1). 2. Brick veneer, <u>anchored stone or masonry veneer</u> with a clear airspace as specified in Table R703.8.4(1). 3. Other approved vented claddings. <p>R703.2 Water-resistive barrier. One layer of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D226 for Type 1 felt or other approved water-resistive barrier shall be applied over studs or sheathing of all exterior walls. No.15 asphalt felt shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm). Where joints occur, felt shall be lapped not less than 6 inches (152 mm). Other <i>approved</i> materials shall be installed in accordance with the <i>water-resistive barrier</i> manufacturer's installation instructions. The No. 15 asphalt felt or other approved <i>water-resistive barrier</i> material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1.</p> <p>R703.2 Water-resistive barrier. One layer of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D226 for Type 1 felt or other approved <u>Not fewer than one layer of water-resistive barrier shall be applied over studs or sheathing of all exterior walls. No.15 asphalt felt shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm). Where joints</u></p>			X			Clarification

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

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		Decrease	None	Increase		
Sub Code:						
RB232-19	<p>occur, felt shall be lapped not less than 6 inches (152 mm). Other <u>approved</u> materials shall be installed in accordance with the <u>water-resistive barrier</u> manufacturer's installation instructions. The No. 15 asphalt felt or other <u>approved water-resistive barrier</u> material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. with flashing as indicated in Section R703.4, in such a manner as to provide a continuous <u>water-resistive barrier</u> behind the exterior wall veneer. Water-resistive barrier materials shall comply with one of the following:</p> <ol style="list-style-type: none"> 1. <u>No. 15 felt complying with ASTM D226, Type 1</u> 2. <u>ASTM E2556, Type 1 or 2</u> 3. <u>ASTM E331 in accordance with Section R703.1.1, or</u> 4. <u>Other approved materials in accordance with the manufacturer's installation instructions.</u> <p>ASTM <u>E2556/E2556M-10: Standard Specification for Vapor Permeable Flexible Sheet Water-resistive Barriers Intended for Mechanical Attachment</u></p>		X			Clarification
RB233-19	<p>R703.2 Water-resistive barrier. Not fewer than one layer of water-resistive barrier shall be applied over studs or sheathing of all exterior walls with flashing as described in Section R703.4, in such a manner as to provide a continuous <u>water-resistive barrier</u> behind the exterior wall veneer. The <u>water-resistive barrier</u> material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1. Water-resistive barrier materials shall comply with one of the following:</p> <ol style="list-style-type: none"> 1. No. 15 felt complying with ASTM D226, Type 1 2. ASTM E2556, Type I or II 3. ASTM E331 in accordance with Section R703.1.1 4. Other approved materials installed in accordance with the manufacturer's installation instructions. <p>5. No.15 asphalt felt and water-resistive barriers complying with ASTM E2556 shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm), and where joints occur, shall be lapped not less than 6 inches (152 mm).</p>		X			Clarification
RB234-19	<p>R704.2 Soffit installation where the design wind pressure is 30 psf or less. Where the design wind pressure is 30 psf or less, soffit installation shall comply with Section R704.2.1, Section R704.2.2, Section R704.2.3, or Section R704.2.4. <u>Soffit materials not addressed in Sections R704.2.1 through R704.2.4 shall be in accordance with the manufacturer's installation instructions.</u></p>		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

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Sub Code:						
	<p>R704.2.1 Vinyl soffit panels. Vinyl soffit panels shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component in accordance with Figure R704.2.1. Where the unsupported span of soffit panels is greater than 16 inches, intermediate nailing strips shall be provided in accordance with Figure R704.2.12. Vinyl soffit panels shall be installed in accordance with the manufacturer’s installation instructions. Fascia covers shall be installed in accordance with the manufacturer’s installation instructions.</p> <p>Delete Proposed Figure R704.2.1 and Replace with the two following figures, R704.2.1 and R704.2.2:</p>					
	<p style="text-align: center;">FIGURE R704.2.1 TYPICAL SINGLE SPAN VINYL SOFFIT PANEL SUPPORT</p>					
	<p style="text-align: center;">FIGURE R704.2.2</p>					

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	<p>TYPICAL DOUBLE SPAN VINYL SOFFIT PANEL SUPPORT</p> <p>R704.3 Soffit installation where the design wind pressure exceeds 30 psf. Where the design wind pressure is greater than 30 psf, soffit installation shall comply with Section R704.3.1, Section R704.3.2, Section R704.3.3, or Section R704.3.4. <u>Soffit materials not addressed in Sections R704.3.1 through R704.3.4 shall be in accordance with the manufacturer’s installation instructions.</u></p> <p>R704.3.1 Vinyl soffit panels. Vinyl soffit panels and their attachments shall be capable of resisting wind loads specified in Table R301.2(2) for walls using an effective wind area of 10 square feet and adjusted for height and exposure in accordance with Table R301.2(3). Vinyl soffit panels shall be installed using fasteners specified by the manufacturer and shall be fastened at both ends to a supporting component such as a nailing strip, fascia or subfascia component <u>in accordance with Figure R704.2.1.</u> Where the unsupported span of soffit panels is greater than 12 inches, intermediate nailing strips shall be provided in accordance with Figure R704.2.1. Vinyl soffit panels shall be installed in accordance with the manufacturer’s installation instructions. Fascia covers shall be installed in accordance with the manufacturer’s installation instructions.</p>					
RB235-19	<p>R703.3.1.1 Wood structural panel soffit. The minimum nominal thickness for wood structural panel soffits shall be $\frac{3}{8}$ inch (9.5 mm) and shall be fastened to framing or nailing strips with 2-inch by 0.099-inch (51 mm x 2.5 mm) nails. Fasteners shall be spaced not less <u>greater</u> than 6 inches (152 mm) on center at panel edges and 12 inches (305 mm) on center at intermediate supports.</p>			X	Minimal	Clarification
RB237-19	<p>R703.4 Flashing. Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. Fluid-applied membranes used as flashing in exterior walls shall comply with AAMA 714. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at the following locations:</p> <p>1. Exterior window and door openings. Flashing at exterior window and door openings shall <u>be installed in accordance with R703.4.1, extend to the surface of the exterior wall finish or to the water-resistive barrier complying with Section 703.2 for subsequent drainage.</u> Mechanically attached flexible flashings shall comply with AAMA 712. Flashing at exterior window and door openings shall be installed in accordance with one or more of the following:</p> <p>1.1. The fenestration manufacturer’s installation and flashing instructions, or for applications not addressed in the fenestration manufacturer’s instructions, in accordance with the flashing manufacturer’s instructions. Where flashing</p>		X			Provides clarification of flashing requirements

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		Decrease	None	Increase		
Sub Code:						
	<p>instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage. Openings using pan flashing shall incorporate flashing or protection at the head and sides.</p> <p>1.2. In accordance with the flashing design or method of a registered design professional.</p> <p>1.3. In accordance with other approved methods.</p> <p>2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.</p> <p>3. Under and at the ends of masonry, wood or metal copings and sills.</p> <p>4. Continuously above all projecting wood trim.</p> <p>5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction.</p> <p>6. At wall and roof intersections.</p> <p>7. At built-in gutters.</p> <p><u>R703.4.1 Flashing installation at exterior window and door openings.</u> <u>Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier complying with Section 703.2 for subsequent drainage. Mechanically attached flexible flashings shall comply with AAMA 712. Flashing at exterior window and door openings shall be installed in accordance with one or more of the following:</u></p> <p>1. <u>The fenestration manufacturer’s installation and flashing instructions, or for applications not addressed in the fenestration manufacturer’s instructions, in accordance with the flashing manufacturer’s instructions. Where flashing instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water resistive barrier for subsequent drainage. Openings using pan flashing shall incorporate flashing or protection at the head and sides.</u></p> <p>2. <u>In accordance with the flashing design or method of a registered design professional.</u></p> <p>3. <u>In accordance with other approved methods.</u></p>					
RB238-19	R703.4 Flashing. Approved corrosion-resistant flashing shall be applied shingle-fashion in a manner to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply		X			Clarification

DRAFT

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>with AAMA 711. Fluid-applied membranes used as flashing in exterior walls shall comply with AAMA 714. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion-resistant flashings shall be installed at the following locations:</p> <ol style="list-style-type: none"> 1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water-resistive barrier complying with Section 703.2 for subsequent drainage. An insulation stop <u>Air sealing</u> shall be installed around all window and door openings <u>on the interior side of the rough opening gap, 1 to 2 inches inward from the face of the exterior sheathing, to allow for drainage of incidental water at the window or door flashing system. Mechanically attached flexible flashings shall comply with AAMA 712. Flashing at exterior window and door openings shall be installed in accordance with one or more of the following: <ol style="list-style-type: none"> 1.1. The fenestration manufacturer’s installation and flashing instructions, or for applications not addressed in the fenestration manufacturer’s instructions, in accordance with the flashing manufacturer’s instructions. Where flashing instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of the exterior wall finish or to the water-resistive barrier for subsequent drainage. Openings using pan flashing shall incorporate flashing or protection at the head and sides. 1.2. In accordance with the flashing design or method of a registered design professional. 1.3. In accordance with other approved methods. </u> 2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings. 3. Under and at the ends of masonry, wood or metal copings and sills. 4. Continuously above all projecting wood trim. 5. Where exterior porches, decks or stairs attach to a wall or floor assembly of wood-frame construction. 6. At wall and roof intersections. 7. At built-in gutters. 					
RB239-19	<p>R703.5 Wood, hardboard and wood structural panel siding. Wood, hardboard, and wood structural panel siding shall be installed in accordance with this section and Table R703.3(1). Hardboard siding shall comply with CPA/ANSI A135.6. Hardboard siding used as architectural trim shall comply with CPA/ANSI A 135.7.</p>		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB240-19	The title of the 2nd column in Tables R703.6.3(1), R703.6.3(2) and R905.7.5(2) was changed as follows: Nail type, and minimum shank diameter and length and shank diameter (inches)		X			Clarification
RB241-19	R703.7.1 Lath. Lath and lath attachments shall be of corrosion-resistant materials in accordance with ASTM C1063. expanded metal, welded wire, or woven wire lath. <u>The lath shall be attached to wood framing members or furring. Where the exterior plaster is serving as wall bracing in accordance with Table R602.10.4, the lath shall be attached directly to framing. The lath shall be attached with 1½-inch-long (38 mm), 11-gage nails having a 7/16-inch (11.1 mm) head, or 7/8-inch-long (22.2 mm), 16-gage staples, spaced not more than 7 inches (178 mm) on center along framing members or furring and not more than 24 inches on center between framing members or furring , or as otherwise approved. Additional fastening between wood framing members shall not be prohibited. Lath attachments to cold-formed steel framing or to masonry, stone, or concrete substrates shall be in accordance with ASTM C 1063. Where lath is installed directly over foam sheathing, lath connections shall also be in accordance with Sections R703.15, R703.16, or R703.17. Where lath is attached to furring installed over foam sheathing, the furring connections shall be in accordance with Sections R703.15, R703.16, or R703.17.</u> Exception: Lath is not required over masonry, cast-in-place concrete, precast concrete or stone substrates prepared in accordance with ASTM C1063.		X			Clarification
RB242-19	R703.7.3.1 Dry Climates. In dry (B) climate zones indicated in Figure N1101.7, water-resistive barriers shall comply with one of the following: 1. The <i>water-resistive barrier</i> shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of a <i>water-resistive barrier</i> complying with ASTM E2556, Type I. The individual layers shall be installed independently such that each layer provides a separate continuous plane. Flashing installed in accordance with Section R703.4 and intended to drain to the water-resistive barrier, shall be directed between the layers. 2. The water-resistive barrier shall be 60-minute Grade D paper or have a water resistance equal to or greater than one layer of a water-resistive barrier complying with ASTM E2556, Type II. The water-resistive barrier shall be separated from the stucco by a layer of foam plastic insulating sheathing or other non-water-absorbing layer, <u>or a designed drainage space.</u> R703.7.3.2 Moist or marine climates. In the moist (A) or marine (C) climate zones indicated in Figure N1101.7, water-resistive barriers shall comply with one of the following:			X		Clarification

DRAFT

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<ol style="list-style-type: none"> In addition to complying with Section R703.7.3.1, a space or <u>drainage material</u> not less than 3/16 inch (5 mm) in depth shall be added to the exterior side of the water-resistive barrier. In addition to complying with Section R703.7.3.1 Item 2, <u>drainage on the exterior side of the water-resistive barrier shall have a space having</u> a drainage efficiency of not less than 90%, as measured in accordance with ASTM E2273 or Annex A2 of ASTM E2925, shall be added to the exterior side of the water-resistive barrier. 					
RB247-19	R703.8.4 Anchorage. Masonry veneer shall be anchored directly to the supporting wall studs with corrosion-resistant metal ties embedded in mortar or grout and extending into the veneer a minimum of 1 ¹ / ₂ inches (38 mm), with not less than 5/8-inch (15.9 mm) mortar or grout cover to outside face. Masonry veneer shall conform to Table R703.8.4(1). Where the masonry veneer tie attachment is fastened directly to wood structural panel not less than 7/16 performance category through insulating sheathing not greater than 2 inches (51 mm) in thickness, see Table R703.8.4(2). Where Table R703.8.4(2) is used, attachment to the wood studs behind the sheathing is not required.		X			Clarification
RB248-19	<p style="text-align: center;">TABLE R703.8.4(1)</p> <p style="text-align: center;">TIE ATTACHMENT AND AIRSPACE REQUIREMENTS</p> <ol style="list-style-type: none"> All fasteners shall have rust-inhibitive coating suitable for the installation in which they are being used, or be manufactured from material not susceptible to corrosion. An airspace that provides drainage shall be permitted to contain mortar from construction. In Seismic Design Category D0, D₁ or D₂, the minimum tie fastener shall be an 8d ring-shank nail (2 ½ in. x 0.131 in.) . Adjustable tie pintle shall include a minimum of 1 pintle leg of wire size W2.8 (MW18) with a maximum offset of 1-1/4 in. Adjustable tie pintle shall include a minimum of 2 pintle legs with a maximum offset of 1-1/4 in. Distance between inside face of brick and end of pintle shall be a maximum of 2 in. Adjustable tie backing attachment components shall consist of one of the following: eyes with minimum wire W2.8 (MW18), barrel with minimum 1/4 in. outside dia., or plate with minimum thickness of 0.074 in. and minimum width of 1-1/4 in. 		X			Clarification
RB249-19	R703.11.2 Installation over foam plastic sheathing. Where vinyl siding or insulated vinyl siding is installed over foam plastic sheathing, the vinyl siding shall comply with Section R703.11 and shall have a <u>wind load design wind pressure resistance rating</u> in accordance with Table R703.11.2. Exceptions:		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>1. Where the foam plastic sheathing is applied directly over wood structural panels, fiberboard, gypsum sheathing or other <i>approved</i> backing capable of independently resisting the design wind pressure, the vinyl siding shall be installed in accordance with Sections R703.3.3 and R703.11.1.</p> <p>2. Where the vinyl siding manufacturer's product specifications provide an approved <u>wind load</u> design wind pressure rating for installation over foam plastic sheathing, use of this <u>wind load</u> design wind pressure rating shall be permitted and the siding shall be installed in accordance with the <i>manufacturer's installation instructions</i>.</p> <p>3. Where the foam plastic sheathing and its attachment have a design wind pressure resistance complying with Sections R316.8 and R301.2.1, the vinyl siding shall be installed in accordance with Sections R703.3.3 and R703.11.1.</p> <p style="text-align: center;">TABLE R703.11.2</p> <p style="text-align: center;"><u>ADJUSTED REQUIRED MINIMUM WIND LOAD DESIGN WIND PRESSURE REQUIREMENT RATING FOR VINYL SIDING INSTALLED OVER FOAM PLASTIC SHEATHING ALONE</u></p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 mile per hour = 0.447 m/s, 1 pound per square foot = 0.0479 kPa.</p> <p>a. Linear interpolation is permitted.</p> <p>b. The table values are based on a maximum 30-foot mean roof height, and effective wind area of 10 square feet Wall Zone 5 (corner), and the ASD design <u>component and cladding</u> wind pressure from Table R301.2(2), <u>adjusted for exposure in accordance with Table R301.2(3)</u>, multiplied by the following adjustment factors: 2.6 <u>1.87</u> (Case 1) and 3.7 <u>2.67</u> (Case 2) for wind speeds less than 130 mph and 3.7 (Case 2) for wind speeds greater than 130 mph.</p> <p>c. Gypsum wallboard, gypsum panel product or equivalent.</p> <p>d. For the indicated wind speed condition, <u>and where</u> foam sheathing <u>is the only sheathing</u> on the exterior of a frame walls with vinyl siding, is not allowed unless the vinyl siding complies with an adjusted minimum design wind pressure requirement as determined in accordance with Note b and the wall assembly is shall be capable of resisting an impact without puncture at least equivalent to that of a wood frame wall with minimum 7/16-inch OSB sheathing as tested in accordance with ASTM E1886. <u>The vinyl siding shall comply with an adjusted design wind pressure requirement in accordance with footnote b, using an adjustment factor of 2.67.</u></p>					

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact						
CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB251-19	<p style="text-align: center;">TABLE R703.15.1</p> <p style="text-align: center;">CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a</p> <p>b. The thickness of wood structural panels complying with the specific gravity requirement of footnote a shall be permitted to be included in satisfying the minimum penetration into framing. For cladding connections to wood structural panels, refer to Table R703.3.3. <u>For brick veneer tie connections to wood structural panels, refer to Table R703.8.4(2).</u></p>	X			Minimal	Clarification
RB252-19	<p style="text-align: center;">TABLE R703.16.2</p> <p style="text-align: center;">FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^a</p> <p>The modification fixes errors in to cells in Table R703.16.2. Added 15psf options for cladding.</p>	X			Eliminates engineering cost	Clarification
RB253-19	<p style="text-align: center;">TABLE R703.15.2</p> <p style="text-align: center;">FURRING MINIMUM FASTENING REQUIREMENTS FOR APPLICATION OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b}</p> <p>For SI: 1 inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa, 1 pound per square inch = 6.895 kPa. DR = Design Required. o.c. = On Center.</p> <p>a. Wood framing and furring shall be Spruce-pine-fir or any wood species with a specific gravity of 0.42 or greater in accordance with AWC NDS.</p> <p>b. Nail fasteners shall comply with ASTM F1667, except nail length shall be permitted to exceed ASTM F1667 standard lengths.</p> <p>c. <u>The thickness of wood structural panels complying with the specific gravity requirement of footnote a shall be permitted to be included insatisfying the minimum required penetration into framing.</u></p> <p>d. Where the required cladding fastener penetration into wood material exceeds ³/₄ inch and is not more than 1¹/₂ inches, a minimum 2 wood furring or an approved design shall be used.</p> <p>e. Foam sheathing shall have a minimum compressive strength of 15 psi in accordance with ASTM C578 or ASTM C1289.</p> <p>f. Furring shall be spaced not more than 24 inches on center, in a vertical or horizontal orientation. In a vertical orientation, furring shall be located over wall studs and attached with the required fastener spacing. In a horizontal orientation, the indicated 8-inch and 12-inch fastener spacing in furring shall be achieved by use of two fasteners into studs at 16 inches and 24 inches on center, respectively.</p>	X			Minimal	Clarification

DRAFT

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB254-19	<p style="text-align: center;">TABLE R703.16.1</p> <p style="text-align: center;">CLADDING MINIMUM FASTENING REQUIREMENTS FOR DIRECT ATTACHMENT OVER FOAM PLASTIC SHEATHING TO SUPPORT CLADDING WEIGHT^{a, b}</p> <p style="text-align: center;"><i>(No change to table or footnotes not shown)</i></p> <p>b. Where cladding is attached to wood structural panel sheathing only, fastening requirements shall be in accordance with Table R703.3.3. <u>Where brick veneer ties are attached to wood structural panel sheathing only, fastening requirements shall be in accordance with Table R703.8.4(2).</u></p>	X			Minimal	Clarification
RB255-19	<p>R802.1.5 Fire-retardant-treated wood. Fire-retardant-treated wood (FRTW) is any wood product that, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E84 or UL 723, a listed flame spread index of 25 or less .In addition, the ASTM E84 or UL 723 test shall be continued for an additional 20-minutes and the flame front shall not progress more than 10.5 feet (3200 mm) beyond the center line of the burners at any time during the extended 30-minute test.</p>		X			Clarification
RB257-19	<p>R802.1.5.2 Other means during manufacture. For wood products produced <u>impregnated with chemicals</u> by other means during manufacture, the treatment shall be an integral part of the manufacturing process of the wood product. The treatment shall provide permanent protection to all surfaces of the wood product. <u>The use of paints, coating, stains or other surface treatments is not an approved method of protection as required by this section.</u></p>		X			Clarification
RB258-19	<p>R802.1.5.3 Testing. For wood products produced by other means during manufacture, other than a pressure process, all sides fire retardant treated wood products the front and back faces of the wood product shall be tested in accordance with and produce the results required in Section R802.1.5. Testing of only the front and back faces of wood structural panels shall be permitted.</p> <p>R802.1.5.3.1 Fire testing of wood structural panels. Wood structural panels shall be tested with a ripped or cut longitudinal gap of 1/8 inch (3.2 mm).</p>			X		Adds fire safety and requires more testing for wood structural panels
RB260-19	<p>R802.4.2 Framing details. Rafters shall be framed opposite from each other to a ridge board, shall not be offset more than 1½ inches (38 mm) from each other and shall be connected with a collar tie or ridge strap in accordance with Section R802.4.6 or <u>directly opposite from each other to a gusset plate in accordance with Table R602.3(1).</u> Rafters shall be nailed to the top wall plates in accordance with Table R602.3(1) unless the roof assembly is required to comply with the uplift requirements of Section R802.11.</p> <p>R802.4.6 Collar ties. Where collar ties are used to connect opposing rafters, they shall be located in the upper third of the <i>attic</i> space and fastened in accordance with Table R602.3(1). Collar ties shall be not less</p>		X			Clarification

DRAFT

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>than 1 inch by 4 inches (25 mm × 102 mm) nominal, spaced not more than 4 feet (1220 mm) on center. Ridge straps shall be permitted to replace collar ties. Ridge straps shall be not less than 1 1/4 inch (32 mm) × 20 gage and shall extend a minimum of 12 inches (305 mm) onto rafters and shall be nailed to the top edge of each rafter with a minimum of three 10d common (3" × 0.148") nails with the closest nail no closer than 2-3/8" from the end of the rafter in accordance with manufacturers installation instructions.</p> <p>R802.3 Ridge. A ridge board used to connect opposing rafters shall be not less than 1 inch (25 mm) nominal thickness and not less in depth than the cut end of the rafter. Where ceiling joist or rafter ties do not provide continuous ties across the structure as required by Section R802.5.2, the a-ridge shall be supported by a wall or ridge beam designed in accordance with accepted engineering practice shall be provided and supported on each end by a wall or column girder.</p> <p>R802.5 Ceiling joists. Ceiling joists shall be continuous across the structure or securely joined where they meet over interior partitions in accordance with Table R802.5.2 Section R802.5.2.1. Ceiling joists shall be fastened to the top plate in accordance with Table R602.3(1).</p> <p>R802.5.2 Ceiling joist and rafter connections. Where ceiling joists run parallel to rafters, and they are located they shall be connected to rafters at the top wall plate in accordance with Table R802.5.2. Where ceiling joists are not connected to the rafters at the top wall plate, they shall be installed in the bottom third of the rafter height, they shall be installed in accordance with Figure R802.4.5 and fastened to rafters in accordance with Table R802.5.2. Where the ceiling joists are installed above the bottom third of the rafter height, the ridge shall be designed as a beam in accordance with R802.3. Where ceiling joists do not run parallel to rafters, the ceiling joists shall be connected to top plates in accordance with Table R602.3(1). Each rafters shall be tied across the structure with a rafter tie in accordance with R802.5.2.2, or the ridge shall be designed as a beam in accordance</p>					

DRAFT

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB261-19	<p>with R802.3, or a 2-inch by 4-inch (51 mm × 102 mm) kicker connected to the ceiling diaphragm with nails equivalent in capacity to Table R802.5.2.</p> <p>R802.5.2.1 Ceiling joists lapped. Ends of ceiling joists shall be lapped not less than 3 inches (76 mm) or butted over bearing partitions or beams and toenailed to the bearing member. Where ceiling joists are used to provide <u>the continuous tie across the building resistance to rafter thrust</u>, lapped joists shall be nailed together in accordance with Table R802.5.2 and butted joists shall be tied together <u>with a connection of equivalent capacity in a manner to resist such thrust.</u> Laps in joists Joists that do not resist thrust <u>provide the continuous tie across the building</u> shall be permitted to be nailed in accordance with Table R602.3(1). Wood structural panel roof sheathing, in accordance with Table R503.2.1.1(1), shall not cantilever more than 9 inches (229 mm) beyond the gable endwall unless supported by gable overhang framing.</p> <p>R802.5.2.2 Rafter ties. Wood rafter ties shall be not less than 2 inches by 4 inches (51 mm × 102 mm) installed in accordance with Table R802.5.2 at <u>each rafter a maximum of 24" o.c.</u> Other approved rafter tie methods shall be permitted.</p> <p>R802.5.2.3 Blocking. Blocking shall be not less than utility grade lumber.</p>	X				Clarification
RB262-19	<p style="text-align: center;">TABLE R802.5.2</p> <p style="text-align: center;">RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS [§]</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.</p> <ol style="list-style-type: none"> a. 10d common (3" × 0.148") nails shall be permitted to be substituted for 16d common (3-1/2" × 0.162") nails where the required number of nails is taken as 1.2 times the required number of 16d common nails, <u>rounded up to the next full nail.</u> b. Heel joint connections are not required where the ridge is supported by a load-bearing wall, header or ridge beam. c. Where intermediate support of the rafter is provided by vertical struts or purlins to a load-bearing wall, the tabulated heel joint connection requirements shall be permitted to be reduced proportionally to the reduction in span. d. Equivalent nailing patterns are required for ceiling joist to ceiling joist lap splices. e. Applies to roof live load of 20 psf or less. f. Tabulated heel joint connection requirements assume that ceiling joists or rafter ties are located at the bottom of the attic space. Where ceiling joists or rafter ties are located higher in the attic, heel joint connection requirements shall be increased by the following factors: <p>where: H_c = Height of ceiling joists or rafter ties measured vertically above from</p>	X				Clarification

DRAFT

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact						
CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>the top of the rafter support walls <u>to the bottom of the ceiling joists or rafter ties.</u></p> <p>H_R = Height of roof ridge measured vertically <u>above from</u> the top of the rafter support walls <u>to the bottom of the roof ridge.</u></p> <p><u>Where H_C / H_R exceeds 1/3, connections shall be designed in accordance with accepted engineering practice.</u></p> <p>g. Tabulated requirements are based on 10 psf roof dead load in combination with the specified roof snow load and roof live load.</p>					
RB263-19	<p>R802.5.2.1 Ceiling joists lapped. Ends of ceiling joists shall be lapped not less than 3 inches (76 mm) or butted over bearing partitions or beams and toenailed to the bearing member. Where ceiling joists are used to provide resistance to rafter thrust, lapped joists shall be nailed together in accordance with Table R802.5.2 and butted joists shall be tied together in a manner to resist such thrust. Joists that do not resist thrust shall be permitted to be nailed in accordance with Table R602.3(1). Wood structural panel roof sheathing, in accordance with Table R503.2.1.1(1), shall not cantilever more than 9 inches (229 mm) beyond the gable endwall unless supported by gable overhang framing.</p>		X			Clarification
RB264-19	<p>R802.6 Bearing. The ends of each rafter or ceiling joist shall have not less than 1½ inches (38 mm) of bearing on wood or metal and not less than 3 inches (76 mm) on masonry or concrete. The bearing on masonry or concrete shall be direct, or a sill plate of 2-inch (51 mm) minimum nominal thickness shall be provided under the rafter or ceiling joist. The sill plate shall provide a minimum nominal bearing area of 48 square inches (30 865 mm²). <u>Where the roof pitch is greater than or equal to 3:12 (25% slope), and ceiling joists or rafter ties are connected to rafters to provide a continuous tension tie in accordance with Section R802.5.2, vertical bearing of the top of the rafter against the ridge board shall satisfy this bearing requirement.</u></p>		X			Clarification
RB265-19	<p>R802.11 Roof tie-down.</p> <p>R802.11.1 Uplift resistance. Roof assemblies shall have uplift resistance in accordance with Sections R802.11.1.1 and R802.11.1.2.</p> <p>Exception: Where the uplift force does not exceed 200 pounds (90.8 kg), rafters and trusses spaced not more than 24 inches (610 mm) on center Rafters or trusses shall be permitted to be attached to their supporting wall assemblies in accordance with Table R602.3(1) <u>where either of the following occur:</u></p> <ol style="list-style-type: none"> 1. <u>Where the uplift force per rafter or truss does not exceed 200 pounds (90.8 kg) as determined by Table R802.11.</u> 2. Where the basic wind speed does not exceed 115 mph, the wind exposure category is B, the roof pitch is 5:12 (42-percent slope) or greater, and the roof span is 32 feet (9754 mm) or less, <u>and</u> rafters and trusses are spaced not more than 24 inches (610 mm) on center shall be permitted to be attached to 		X			Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>their supporting wall assemblies in accordance with Table R602.3(1).</p> <p>R802.11.1.1 Truss uplift resistance. Trusses shall be attached to supporting wall assemblies by connections capable of resisting uplift forces as specified on the truss design drawings for the ultimate design wind speed as determined by Figure R301.2(5)A and listed in Table R301.2(1) or as shown on the construction documents. Uplift forces shall be permitted to be determined as specified by Table R802.11, if applicable, or as determined by accepted engineering practice.</p> <p>R802.11.1.2 Rafter uplift resistance. Individual rafters shall be attached to supporting wall assemblies by connections capable of resisting uplift forces as determined by Table R802.11 or as determined by accepted engineering practice. Connections for beams used in a roof system shall be designed in accordance with accepted engineering practice.</p>					
RB266-19	<p style="text-align: center;">TABLE R804.3</p> <p style="text-align: center;">ROOF FRAMING FASTENING SCHEDULE^{a, b}</p> <p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 mil = 0.0254 mm.</p> <p>a. Screws are a minimum No. 10 unless noted otherwise.</p> <p>b. Indicated number of screws shall be applied through the flanges of the truss or ceiling joist or through each leg of a 54 mil clip angle. See Section R804.3.8 for additional requirements to resist uplift forces.</p> <p style="text-align: center;">TABLE R804.3.2.1(2)</p> <p style="text-align: center;">ULTIMATE DESIGN WIND SPEED TO EQUIVALENT SNOW LOAD CONVERSION</p> <p>For SI: 1 mile per hour = 0.447 m/s, 1 pound per square foot = 0.0479 kPa.</p> <p>R804.3.2.1.2 Rake overhangs. Rake overhangs shall not exceed 12 inches (305 mm) measured horizontally. <u>the limitations provided for Option #1 or Option #2 in Figure R804.3.2.1.2.</u> Outlookers at gable endwalls shall be installed in accordance with Figure R804.3.2.1.2. <u>The required strength for uplift connectors required for Option #1 shall be determined in accordance with AISI S230 Table F3-4.</u></p>			X	Minimal	Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>OPTION #1</p> <p>OPTION #2</p> <p>NOTE: ROOF SHEATHING JOINTS PARALLEL TO THE GABLE ENDWALL ARE NOT PERMITTED IN THIS REGION UNLESS AN APPROVED TENSION TIE IS PROVIDED.</p>					
	<p>For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.</p> <p>FIGURE R804.3.2.1.2 GABLE ENDWALL OVERHANG DETAILS</p> <p>R804.3.2.5 Roof rafter bottom flange bracing. The bottom flanges of roof rafters shall be continuously braced, at a maximum spacing of 8 <u>4</u> feet (2440 mm) as measured parallel to the roof rafters, with one of the following members:</p> <ol style="list-style-type: none"> 1. Minimum 33-mil (0.84 mm) C-shaped member. 2. Minimum 33-mil (0.84 mm) track section. 3. Minimum 1 1/2-inch by 33-mil (38 mm by 0.84 mm) steel strap. <p>The bracing element shall be fastened to the bottom flange of each roof rafter with one No. 8 screw and shall be fastened to blocking with two No. 8 screws. Blocking shall be installed between roof rafters in-line with the continuous bracing at a maximum spacing of 12 feet (3658 mm) measured perpendicular to the roof rafters. The ends of continuous bracing shall be fastened to blocking or anchored to a stable building component with two No. 8 screws.</p>					

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB267-19	R805.1 Ceiling installation. Ceilings shall be installed in accordance with the requirements for interior wall finishes as provided in Section R702 Sections R702.1 through R702.6		X			Clarification
RB268-19	<p style="text-align: center;">SECTION R806 ROOF VENTILATION</p> <p>R806.1 Ventilation required. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of $\frac{1}{16}$ inch (1.6 mm) minimum and $\frac{1}{4}$ inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than $\frac{1}{4}$ inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of $\frac{1}{16}$ inch (1.6 mm) minimum and $\frac{1}{4}$ inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air and shall be protected to prevent the entry of birds, rodents, snakes and other similar creatures.</p> <p>R806.5 Unvented attic and unvented enclosed rafter assemblies. Unvented <i>attics</i> and unvented enclosed roof framing assemblies created by ceilings that are applied directly to the underside of the roof framing members and structural roof sheathing applied directly to the top of the roof framing members/rafters, shall be permitted where all the following conditions are met:</p> <ol style="list-style-type: none"> 1. The unvented <i>attic</i> space is completely within the <i>building thermal envelope</i>. 2. Interior Class I vapor retarders are not installed on the ceiling side (<i>attic</i> floor) of the unvented <i>attic</i> assembly or on the ceiling side of the unvented enclosed roof framing assembly. 3. Where wood shingles or shakes are used, a minimum $\frac{1}{4}$-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing. 4. In Climate Zones 5, 6, 7 and 8, any <i>air-impermeable insulation</i> shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation. 5. Insulation shall comply with Item 5.3 and either Item 5.1 or 5.2: <ol style="list-style-type: none"> 5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing. 	X				Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>5.1.1. Where only <i>air-impermeable insulation</i> is provided, it shall be applied in direct contact with the underside of the structural roof sheathing.</p> <p>5.1.2. Where <i>air-permeable insulation</i> is installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof sheathing in accordance with the <i>R</i>-values in Table R806.5 for condensation control.</p> <p>5.1.3. Where both <i>air-impermeable</i> and <i>air-permeable insulation</i> are provided, the <i>air-impermeable insulation</i> shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the <i>R</i>-values in Table R806.5 for condensation control. The <i>air-permeable insulation</i> shall be installed directly under the <i>air-impermeable insulation</i>.</p> <p>5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.</p> <p>5.2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented <i>attics</i> shall meet the following requirements:</p> <p>5.2.1. An approved <i>vapor diffusion port</i> shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.</p> <p>5.2.2. The port area shall be greater than or equal to 1:600 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.</p> <p>5.2.3. The vapor-permeable membrane in the <i>vapor diffusion port</i> shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.</p> <p>5.2.4. The <i>vapor diffusion port</i> shall serve as an air barrier between the <i>attic</i> and the exterior of the building.</p> <p>5.2.5. The <i>vapor diffusion port</i> shall protect the <i>attic</i> against the entrance of rain and snow.</p>					

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>5.2.6. Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.</p> <p>5.2.7. The roof slope shall be greater than or equal to 3:12 (vertical/horizontal).</p> <p>5.2.8. Where only air-permeable insulation is used, it shall be installed directly below the structural roof sheathing, on top of the attic floor, or on top of the ceiling.</p> <p>5.2.9. <i>Air-impermeable insulation, if anywhere used in conjunction with air-permeable insulation</i>, shall be directly above or below the structural roof sheathing and is not required to meet the R-value in Table 806.5. Where directly below the structural roof sheathing, there shall be no space between the <i>air-impermeable insulation</i> and air-permeable insulation.</p> <p>5.2.10. The <u>Where air-permeable insulation is used and is installed directly below the roof structural sheathing</u>, air shall be supplied at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m²) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. <u>Where both air-impermeable and air-permeable insulation are used, and the R-value in Table 806.5 is met, air supply to the attic is not required.</u> 2. <u>Where only air-permeable insulation is used and is installed on top of the attic floor, or on top of the ceiling, air supply to the attic is not required.</u> <p>5.3. Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.</p>					

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB271-19	<p style="text-align: center;">SECTION R806 ROOF VENTILATION</p> <p>R806.1 Ventilation required. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. Ventilation openings shall have a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Ventilation openings having a least dimension larger than 1/4 inch (6.4 mm) shall be provided with corrosion-resistant wire cloth screening, hardware cloth, perforated vinyl or similar material with openings having a least dimension of 1/16 inch (1.6 mm) minimum and 1/4 inch (6.4 mm) maximum. Openings in roof framing members shall conform to the requirements of Section R802.7. Required ventilation openings shall open directly to the outside air and shall be protected to prevent the entry of birds, rodents, snakes and other similar creatures.</p> <p>R806.5 Unvented attic and unvented enclosed rafter assemblies. Unvented <i>attics</i> and unvented enclosed roof framing assemblies created by ceilings that are applied directly to the underside of the roof framing members and structural roof sheathing applied directly to the top of the roof framing members/rafters, shall be permitted where all the following conditions are met:</p> <ol style="list-style-type: none"> 1. The unvented <i>attic</i> space is completely within the <i>building thermal envelope</i>. 2. Interior Class I vapor retarders are not installed on the ceiling side (<i>attic</i> floor) of the unvented <i>attic</i> assembly or on the ceiling side of the unvented enclosed roof framing assembly. 3. Where wood shingles or shakes are used, a minimum 1/4-inch (6.4 mm) vented airspace separates the shingles or shakes and the roofing underlayment above the structural sheathing. 4. In Climate Zones 5, 6, 7 and 8, any <i>air-impermeable insulation</i> shall be a Class II vapor retarder, or shall have a Class II vapor retarder coating or covering in direct contact with the underside of the insulation. 5. Insulation shall comply with Item 5.3 and either Item 5.1 or 5.2: <ol style="list-style-type: none"> 5.1. Item 5.1.1, 5.1.2, 5.1.3 or 5.1.4 shall be met, depending on the air permeability of the insulation directly under the structural roof sheathing. <ol style="list-style-type: none"> 5.1.1. Where only <i>air-impermeable insulation</i> is provided, it shall be applied in direct contact with the underside of the structural roof sheathing. 5.1.2. Where <i>air-permeable insulation</i> is installed directly below the structural sheathing, rigid board or sheet insulation shall be installed directly above the structural roof 	X				Clarification

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>sheathing in accordance with the <i>R</i>-values in Table R806.5 for condensation control.</p> <p>5.1.3. Where both <i>air-impermeable</i> and <i>air-permeable insulation</i> are provided, the <i>air-impermeable insulation</i> shall be applied in direct contact with the underside of the structural roof sheathing in accordance with Item 5.1.1 and shall be in accordance with the <i>R</i>-values in Table R806.5 for condensation control. The <i>air-permeable insulation</i> shall be installed directly under the <i>air-impermeable insulation</i>.</p> <p>5.1.4. Alternatively, sufficient rigid board or sheet insulation shall be installed directly above the structural roof sheathing to maintain the monthly average temperature of the underside of the structural roof sheathing above 45°F (7°C). For calculation purposes, an interior air temperature of 68°F (20°C) is assumed and the exterior air temperature is assumed to be the monthly average outside air temperature of the three coldest months.</p> <p>5.2. In Climate Zones 1, 2 and 3, air-permeable insulation installed in unvented <i>attics</i> shall meet the following requirements:</p> <p>5.2.1. An approved <i>vapor diffusion port</i> shall be installed not more than 12 inches (305 mm) from the highest point of the roof, measured vertically from the highest point of the roof to the lower edge of the port.</p> <p>5.2.2. The port area shall be greater than or equal to 1:600 of the ceiling area. Where there are multiple ports in the attic, the sum of the port areas shall be greater than or equal to the area requirement.</p> <p>5.2.3. The vapor-permeable membrane in the <i>vapor diffusion port</i> shall have a vapor permeance rating of greater than or equal to 20 perms when tested in accordance with Procedure A of ASTM E96.</p> <p>5.2.4. The <i>vapor diffusion port</i> shall serve as an air barrier between the <i>attic</i> and the exterior of the building.</p> <p>5.2.5. The <i>vapor diffusion port</i> shall protect the <i>attic</i> against the entrance of rain and snow.</p> <p>5.2.6. Framing members and blocking shall not block the free flow of water vapor to the port. Not less than a 2-inch (51 mm) space shall be provided between any blocking and the roof sheathing. Air-permeable insulation shall be permitted within that space.</p> <p>5.2.7. The roof slope shall be greater than or equal to 3:12 (vertical/horizontal).</p>					

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>5.2.8. Where only air-permeable insulation is used, it shall be installed directly below the structural roof <u>sheathing, on top of the attic floor, or on top of the ceiling.</u></p> <p>5.2.9. <u>Air-impermeable insulation, if anywhere used in conjunction with air-permeable insulation,</u> shall be directly above or below the structural roof sheathing and is not required to meet the R-value in Table 806.5. Where directly below the structural roof sheathing, there shall be no space between the <i>air-impermeable insulation</i> and air-permeable insulation.</p> <p>5.2.10. <u>The Where air-permeable insulation is used and is installed directly below the roof structural sheathing,</u> air shall be supplied at a flow rate greater than or equal to 50 CFM (23.6 L/s) per 1,000 square feet (93 m²) of ceiling. The air shall be supplied from ductwork providing supply air to the occupiable space when the conditioning system is operating. Alternatively, the air shall be supplied by a supply fan when the conditioning system is operating.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> <u>Where both air-impermeable and air-permeable insulation are used, and the R-value in Table 806.5 is met, air supply to the attic is not required.</u> <u>Where only air-permeable insulation is used and is installed on top of the attic floor, or on top of the ceiling, air supply to the attic is not required.</u> <p>5.3 Where preformed insulation board is used as the air-impermeable insulation layer, it shall be sealed at the perimeter of each individual sheet interior surface to form a continuous layer.</p>					
RB274-19	<p>R905.1.1 Underlayment. <i>Underlayment</i> for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. <i>Underlayment</i> materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). <i>Underlayment</i> shall be applied in accordance with Table R905.1.1(2). <i>Underlayment</i> shall be attached in accordance with Table R905.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> As an alternative, self-adhering polymer-modified bitumen underlayment bearing a label indicating compliance to ASTM D1970, and installed in accordance with both the underlayment manufacturer’s and roof covering manufacturer’s instructions for the 		X			Clarification

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted.</p> <p>2. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane bearing a label indicating compliance to complying with ASTM D1970, installed in accordance with the manufacturer’s installation instructions for the deck material, shall be applied over all joints in the roof decking. An approved underlayment complying with Table R905.1.1(1) for the applicable roof covering for maximum ultimate design wind speeds, Vult, less than 140 miles per hour shall be applied over the entire roof over the 4-inch-wide (102 mm) membrane strips. Underlayment shall be applied in accordance with Table R905.1.1(2) using the application requirements for areas where wind design is not required in accordance with Figure R301.2(4)B. Underlayment shall be attached in accordance with Table R905.1.1(3).</p> <p>3. As an alternative, two layers of underlayment complying with ASTM D226 Type II or ASTM D4869 Type III or Type IV shall be permitted to be installed as follows in 3.1–3.4:</p> <p>3.1. Apply a 19-inch-wide (483 mm) strip of underlayment parallel with the eave. Starting at the eave, apply 36-inch-wide (914 mm) strips of underlayment felt, overlapping successive sheets 19 inches (483 mm). End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm).</p> <p>3.2. The underlayment shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps.</p> <p>3.3. Underlayment shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25 mm). Metal caps shall have a thickness of not less than 32-gage sheet metal. Power-driven metal caps shall have a thickness of not less than 0.010 inch (0.25 mm). Minimum thickness of the outside edge of plastic caps shall be 0.035 inch (0.89 mm).</p> <p>3.4. The cap nail shank shall be not less than 0.083 inch (2.11 mm) for ring shank cap nails and 0.091 inch (2.31 mm) for smooth shank cap nails. Cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch (19 mm) into the roof sheathing.</p>					

Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
RB275-19	<p>R905.1.1 Underlayment. <i>Underlayment</i> for asphalt shingles, clay and concrete tile, metal roof shingles, mineral-surfaced roll roofing, slate and slate-type shingles, wood shingles, wood shakes, metal roof panels and <i>photovoltaic shingles</i> shall conform to the applicable standards listed in this chapter. <i>Underlayment</i> materials required to comply with ASTM D226, D1970, D4869 and D6757 shall bear a label indicating compliance to the standard designation and, if applicable, type classification indicated in Table R905.1.1(1). <i>Underlayment</i> shall be applied in accordance with Table R905.1.1(2). <i>Underlayment</i> shall be attached in accordance with Table R905.1.1(3).</p> <p>Exceptions:</p> <ol style="list-style-type: none"> As an alternative, self-adhering polymer-modified bitumen <i>underlayment</i> complying with ASTM D1970 installed in accordance with both the <i>underlayment</i> manufacturer’s and roof covering manufacturer’s instructions for the deck material, roof ventilation configuration and climate exposure for the roof covering to be installed, shall be permitted. As an alternative, a minimum 4-inch-wide (102 mm) strip of self-adhering polymer-modified bitumen membrane complying with ASTM D1970, installed in accordance with the <i>manufacturer’s installation instructions</i> for the deck material, shall be applied over all joints in the roof decking. An <i>approved underlayment</i> for the applicable roof covering for maximum ultimate design wind speeds, V_{ult}, less than 140 miles per hour <u>areas where wind design is not required in accordance with Figure R301.2(4)B</u> shall be applied over the entire roof over the 4-inch-wide (102 mm) membrane strips. As an alternative, two layers of <i>underlayment</i> complying with ASTM D226 Type II or ASTM D4869 Type III or Type IV shall be permitted to be installed as follows in 3.1–3.4: <ol style="list-style-type: none"> Apply a 19-inch-wide (483 mm) strip of <i>underlayment</i> parallel with the eave. Starting at the eave, apply 36-inch-wide (914 mm) strips of <i>underlayment</i> felt, overlapping successive sheets 19 inches (483 mm). End laps shall be 4 inches (102 mm) and shall be offset by 6 feet (1829 mm). The <i>underlayment</i> shall be attached with corrosion-resistant fasteners in a grid pattern of 12 inches (305 mm) between side laps with a 6-inch (152 mm) spacing at side and end laps. <i>Underlayment</i> shall be attached using metal or plastic cap nails with a nominal cap diameter of not less than 1 inch (25 mm). Metal caps shall have a thickness of not less than 32-gage sheet metal. Power driven metal caps shall have a thickness of not less than 0.010 inch (0.25 mm). Minimum thickness of the outside edge of plastic caps shall be 0.035 inch (0.89 mm). 			X	\$0.10 per Sqft. minimum	Clarification

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Table 11. 2021 IRC STRUCTURAL Changes Cost Impact

CODE CHANGE #	2021 IRC STRUCTURAL CHANGES SUMMARY	IRC COST IMPACT			ESTIMATED AMOUNT*	BENEFIT OF CHANGE
		Decrease	None	Increase		
Sub Code:						
	<p>3.4. The cap nail shank shall be not less than 0.083 inch (2.11 mm) for ring shank cap nails and 0.091 inch (2.31 mm) for smooth shank cap nails. Cap nail shank shall have a length sufficient to penetrate through the roof sheathing or not less than 3/4 inch (19 mm) into the roof sheathing.</p> <p style="text-align: center;">TABLE R905.1.1(1) UNDERLAYMENT TYPES</p> <p style="text-align: center;">TABLE R905.1.1(2) UNDERLAYMENT APPLICATION</p> <p style="text-align: center;">TABLE R905.1.1(3) UNDERLAYMENT APPLICATION</p>					
RB277-19	<p>R905.3.1 Deck requirements. Concrete and clay tile shall be installed only over solid structural sheathing boards.</p> <p><u>Exception: Spaced lumber sheathing in accordance with Section R803.1 shall be permitted in Seismic Design Categories A, B and C.</u></p>		X			Clarification
RB278-19	<p>R905.3.6 Fasteners. Nails shall be corrosion resistant and not less than 11-gage, [0.120 inch (3 mm)] 5/16-inch (11 mm) head, and of sufficient length to penetrate the deck not less than 3/4 inch (19 mm) or through the thickness of the deck, whichever is less. Attaching wire for clay or concrete tile shall not be smaller than 0.083 inch (2 mm). Perimeter fastening areas include three tile courses but not less than 36 inches (914 mm) from either side of hips or ridges and edges of eaves and gable rakes.</p>		X			Clarification
RB279-19	<p style="text-align: center;">TABLE R905.4.4.1 CLASSIFICATION OF STEEP SLOPE METAL ROOF SHINGLES TESTED IN ACCORDANCE WITH ASTM D3161 OR D7158</p> <p>For SI: 1 foot = 304.8 mm; 1 mile per hour = 0.447 m/s.</p> <p>a. The standard calculations contained in ASTM D7158 assume Exposure Category B or C and a building height of 60 feet or less. Additional calculations are required for conditions outside of these assumptions.</p>		X			Clarification
RB283-19	<p>R906.1 General. The use of Where above-deck thermal insulation is installed, such insulation shall be permitted provided that such insulation is covered with an approved roof covering and complies with FM 4450 shall comply with NFPA 276 or UL 1256.</p> <p>NFPA 276-15: Standard Method of Fire Tests for Determining the Heat Release Rate of Roofing Assemblies with Combustible Above-deck Roofing Components</p>		X			Replaces FM4450 with NFPA 276 for roof insulation

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APPENDIX L DISCLAIMER

Probable Construction Costs Opinions

Assumptions

This Estimate is not a guarantee of Final Bid Cost or of Final Project Cost.

This is an Opinion of Probable Cost of Mechanical, Electrical, and Piping (M.E.P.) Systems for the proposed buildings.

- The estimate was compiled using documents provided by various sources.
- The estimate is representative of average unit pricing and labor from historical job costs of similar type, cost and labor data from Mechanical Contractors Association of America (MCAA), CostWorks 2015 Qtr. 2 (Change Date and Qtr) by R.S. Means Company Inc, National Electrical Contractors Association (NECA) and Sheet Metal Estimating by Herbert C. Wendes.
- The subcontractor unit rates include the subcontractor's overhead and profit, unless otherwise stated.
- The mark-ups included in the unit prices cover the cost of field overhead, home office overhead and profit, and range from 15% to 25% of the costs of a particular item.

Since we have no control over the cost of labor, material and equipment, or the contractor's method of carrying out the work and determining the price, or over competitive bidding or market conditions, this opinion of probable construction cost provided is made on the basis of experience and qualifications. This opinion represents our best judgment as professional construction consultants with the Construction Industry. However, we cannot and do not guarantee that proposals, bids or the construction cost will not vary from the opinions of probable cost in this estimate.

General Assumptions:

- "Allowances" are considered to be an allotted sum of money for a particular system or scope of work for which sufficient detail is not available to determine a definitive cost.
- These cost allowances are included to project a final cost to include labor, material, equipment and any subcontractor costs.
- The owner receives the savings for any amount under the allowance and is at risk for any amount over the allowance.
- The estimate is in today's dollars, and has been adjusted to the local area.
- This estimate does not include any fees or permits.
- This estimate is intended to reflect construction costs only.
- This estimate is intended to reflect normal construction schedules only.
- Variations in material costs, labor efficiencies, wage rates, union practices, and bid climate will effect final costs.
- Workers will report to the actual job site.
- Materials delivered to the actual job site will need to be scheduled.
- No premium or overtime has been included.
- No General Construction costs have been included.
- All utilities have sufficient capacity for the added loads.