



**This document created by the Florida Department of Business and Professional Regulation -
850-487-1824**

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

1

SP11184		/S125-22 Part I		1	
Date Submitted	03/15/2024	Section	110.3.12.1	Proponent	Mo Madani
Chapter	1	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

This section is marked reserved in the 2023 FBC-B/Section 110.3.11.1.

Summary of Modification

When nonresidential buildings in flood hazard areas are proposed to be dry floodproofed, several aspects of design are critical. Proposal concerning this issue.

Rationale

See attached

SP11184 Text Modification

See attached

Page: 1

Mod11184_TextOfModification.pdf

S125-22 Part I

Original Proposal

IBC: [A] 110.3.12.1, 1612.4

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IBC STRUCTURAL CODE COMMITTEE. PART II WILL BE HEARD BY THE ADMIN CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

[A] 110.3.12.1 Flood hazard documentation. If located in a *flood hazard area*, documentation of the elevation of the lowest floor or the elevation of dry floodproofing, if applicable, as required in Section 1612.4 shall be submitted to the *building official* prior to the final inspection.

1612.4 Flood hazard documentation. The following documentation shall be prepared and sealed by a *registered design professional* and submitted to the *building official*:

1. For construction in *flood hazard areas* other than *coastal high hazard areas* or *coastal A zones*:
 - 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 110.3.12.1.
 - 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.
 - 1.3. For *dry floodproofed* nonresidential buildings, *construction documents* shall include a statement that the *dry floodproofing* is designed in accordance with ASCE 24 and shall include the flood emergency plan specified in Chapter 6 of ASCE 24.
 - 1.4. For dry floodproofed nonresidential buildings, the elevation to which the building is dry floodproofed as required for the final inspection in Section 110.3.12.1.
2. For construction in *coastal high hazard areas* and *coastal A zones*:
 - 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 110.3.12.1.
 - 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.
 - 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.
 - 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.

Reason: When nonresidential buildings in flood hazard areas are proposed to be dry floodproofed, several aspects of design are critical, including the strength of walls and flood shields that are designed to be watertight (addressed in 1612.4 #1.3) and the required elevation

of the dry floodproofing, which is specified in ASCE 24 Chapter 6.

The proposed change follows the pattern already established for documentation of lowest floor elevations prior to the final inspection. Because dry floodproofed buildings do not have elevated "lowest floors," rather than survey floors, this change clarifies the elevation to which dry floodproofed buildings are protected is to be documented. Having this elevation determined and documented helps local officials confirm compliance with the design requirements. The NFIP regulations require communities to obtain the elevation to which structures are floodproofed [44 Code of Federal Regulations Sec. 60.3(b)(5)(ii)].

FEMA's Mitigation Assessment Team reports prepared after some significant flood events document failures of dry floodproofing systems. Some failures are caused by floodwater rising higher than the protective measures, which indicates the value of documenting that construction of those measures does meet the requirements for compliance.

Many communities require permittees to use the FEMA Floodproofing Certificate for Non-Residential Structures (FEMA Form 086-0-34). That form is prepared for use to certify designs as part of documentation submitted with permit applications, as well as for use to certify the "floodproofed elevation." The form also is used when certification of as-built conditions is required, including the elevation to which the building is dry floodproofed. The FEMA National Flood Insurance Program requires as-built certification as part of qualifying for NFIP flood insurance policy coverage for dry floodproofed nonresidential buildings.

Bibliography: FEMA Form 086-0-34, FEMA Floodproofing Certificate for Non-Residential Structures: <https://www.fema.gov/media-library/assets/documents/2748>

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal clarifies that the elevation to which dry floodproofed buildings are protected is to be documented, rather than documentation of the "lowest floors." There is no change in cost because the cost to survey the elevation to which a building is dry floodproofed would be equal to the cost to survey a floor elevation relative to datum. Completion of the survey portion of the FEMA Nonresidential Floodproofing Certificate requires fewer inputs by the professional certifying the survey than are required to complete a FEMA Elevation Certificate.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: Approved as submitted as the proposal adjusts the requirements for flood hazard documentation consistent with ASCE 24. (Vote: 14-0)

Final Hearing Results

S125-22 Part I

AS

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

2

SP11064		/G182-21			
Date Submitted	03/14/2024	Section	1020.2.1	Proponent	Mo Madani
Chapter	10	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC-B.

Summary of Modification

Elevator doors that open into a rated corridor have to meet both the fire partition and fire barrier requirements. The options for elevator door protection in Section 3006.3 would be a viable option, so Section 3006.2.1 could be moved up as Item 6 in Section 3006.2.

Rationale

See attached

SP11064 Text Modification

See attached

G182-21

Original Proposal

IBC: 1020.2.1 (IFC[BE] 1020.2.1), 3006.2, 3006.2.1

Proponents: Mike Nugent, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org)

2021 International Building Code

Revise as follows:

3006.2 Hoistway opening protection Elevator hoistway door required. Elevator hoistway ~~doors~~ ~~door openings~~ shall be protected in accordance with Section 3006.3 where an elevator hoistway connects more than three *stories*, is required to be enclosed within a *shaft enclosure* in accordance with Section 712.1.1 and any of the following conditions apply:

1. The building is not protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The building contains a Group I-1, Condition 2 occupancy.
3. The building contains a Group I-2 occupancy.
4. The building contains a Group I-3 occupancy.
5. The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) in height. The height of the hoistway shall be measured from the *lowest floor* to the highest floor of the floors served by the hoistway.
6. The elevator hoistway door is located in the wall of a corridor required to be fire-resistance rated in accordance with Section 1020.1.

Exceptions:

1. Protection of elevator hoistway ~~doors~~ ~~door openings~~ is not required where the elevator serves only *open parking garages* in accordance with Section 406.5.
2. Protection of elevator hoistway ~~doors~~ ~~door openings~~ is not required at the level(s) of exit discharge, provided that the level(s) of exit discharge is equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. ~~Enclosed elevator lobbies and protection~~ Protection of elevator hoistway ~~doors~~ ~~door openings~~ are not required on levels where the elevator hoistway opens to the exterior.

Delete without substitution:

~~**3006.2.1 Rated corridors.** Where corridors are required to be fire-resistance rated in accordance with Section 1020.2, elevator hoistway openings shall be protected in accordance with Section 3006.3.~~

Revise as follows:

1020.2.1 Hoistway opening protection. Elevator hoistway doors in elevators hoistway enclosures required to be fire resistance rated shall be protected in accordance with Section 716. Elevator hoistway ~~doors~~ ~~openings~~ shall also be protected in accordance with Section 3006.2 ~~3006.2.1~~.

Reason: Elevator doors that open into a rated corridor have to meet both the fire partition and fire barrier requirements. The options for elevator door protection in Section 3006.3 would be a viable option, so Section 3006.2.1 could be moved up as Item 6 in Section 3006.2.

The change to 1020.2.1 is a pointer to both the rated corridor and elevator hoistway door protection requirements.

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 2020 the BCAC has held

several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This is a clarification of current requirements.

Public Hearing Results

Committee Action

As Modified

Committee Modification: **3006.2.1 Rated corridors.** Where corridors are required to be fire-resistance rated in accordance with Section 1020.2, elevator hoistway openings shall be protected in accordance with Section 3006.3.

Committee Reason: The modification retained the current language in Section 3006.2.1. This modification was presented as needed because the provisions in the FS proposals related to elevator hoistway doors have not been decided yet. Elevator hoistway doors may be needed in 2 and 3 story Group R-2 occupancies. The proposal was approved as this cleans up the language for elevator hoistway doors and should make the code easier to understand. (Vote: 14-0)

Final Hearing Results

G182-21

AM

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Building

SP11186		/S126-22		3	
Date Submitted	03/15/2024	Section	1612.4	Proponent	Mo Madani
Chapter	16	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Overlap
Commission Action	Pending Review			Classification	

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC-B. Also, this section does not exist in the FBC.

Summary of Modification

This code change does not change the loads used to design breakaway walls. It just shows how the loads expressed using allowable stress design are expressed as ultimate loads, which is used in ASCE 7 for seismic design and wind loads.

Rationale

See attached

SP11186Text Modification

See attached

Page: 1

Mod11186_TextOfModification.pdf

S126-22

Original Proposal

IBC: 1612.4

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Building Code

Revise as follows:

1612.4 Flood hazard documentation. The following documentation shall be prepared and sealed by a *registered design professional* and submitted to the *building official*:

1. For construction in *flood hazard areas* other than *coastal high hazard areas* or *coastal A zones*:
 - 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 110.3.12.1.
 - 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.
 - 1.3. For *dry floodproofed* nonresidential buildings, *construction documents* shall include a statement that the *dry floodproofing* is designed in accordance with ASCE 24 and shall include the flood emergency plan specified in Chapter 6 of ASCE 24.
2. For construction in *coastal high hazard areas* and *coastal A zones*:
 - 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 110.3.12.1.
 - 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.
 - 2.3. For breakaway walls designed to have a resistance of more than 20 psf (0.96 kN/m²) determined using *allowable stress design* or a resistance to an ultimate load of more than 33 psf (1.58 kN/m²), *construction documents* shall include a statement that the breakaway wall is designed in accordance with ASCE 24.
 - 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.

Reason: This code change does not change the loads used to design breakaway walls. It just shows how the loads expressed using allowable stress design are expressed as ultimate loads, which is used in ASCE 7 for seismic design and wind loads. One of the reasons for the lower load shown in the existing section is to avoid breakaway walls that might fail under wind loads. Showing the loads expressed as ultimate loads will make it easier to compare to calculated wind loads and seismic loads.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The code change proposal shows how the loads expressed using allowable stress design are expressed as ultimate loads to better align with ASCE 7. There is no change to the technical content of the provisions. By showing how existing load values are expressed as ultimate loads, there will be no cost impact when approving this proposal.

SP11186Text Modification

Public Hearing Results**Committee Action****As Submitted****Committee Reason:** Approved as submitted as the proposal clarifies the LRFD resistance requirements. (Vote: 14-0)**Final Hearing Results**

S126-22

AS

Page: 2

Mod_11186_Text_S126-22.pdf

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

4

SP11061		/G177-21		4	
Date Submitted	03/14/2024	Section	3001.2	Proponent	Mo Madani
Chapter	30	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC.

Summary of Modification

Modifies text of Section 3001.2. The title was modified because this communication system needs to be useable by all people, not just the deaf, hard of hearing and speech impaired.

Rationale

See attached

SP11061 Text Modification

See attached

G177-21

Original Proposal

IBC: 3001.2

Proponents: Kevin Brinkman, National Elevator Industry, Inc., National Elevator Industry, Inc. (klbrinkman@neii.org)

2021 International Building Code

Revise as follows:

3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired. An emergency elevator two-way communication system shall be provided. ~~The system shall provide that includes both visual visible text and audible communication modes that meet all of the following complying with the~~ requirements in ASME A17.1/CSA B44.:

- ~~1. When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.~~
- ~~2. Is operational when the elevator is operational.~~
- ~~3. Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.~~

Reason: The title was modified because this communication system needs to be useable by all people, not just the deaf, hard of hearing and speech impaired.

Added "elevator" to clarify that this applies to the communication system in the elevator since the title is not part of the requirement.

Deleted "two-way" for consistency with ASME A17.1/CSA B44 language.

The communication system is part of the elevator system requirements and the technical criteria for the communication system is provided in ASME A17.1/B44 Safety Code for Elevators and Escalators. As part of the elevator system, the communication system is inspected by elevator inspectors; therefore, the requirements belong in the elevator code. The requirements as currently written in the IBC are no longer needed because the elevator code contains significantly more detailed requirements to make the system accessible to the deaf, hard of hearing, and speech impaired. This proposal retains the base requirement for the system in the IBC but references the technical requirements in ASME A17.1-2019/CSA B44:19 elevator code which is referenced in IBC Chapter 35. The requirements in ASME A17.1-2019/CSA B44:19 were developed for consistency with the guidelines in the ADA Title III which is the regulation specifically for effective communication with the deaf, hard of hearing and speech impaired.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The proposal will neither increase nor decrease the cost of construction because the requirements in the A17.1-2019/CSA B44:19 code already need to be complied with per Section 3001.3 Referenced Standards.

Public Hearing Results

Committee Action

Disapproved

Committee Reason: This proposal was disapproved because the committee felt that the revised text could be read to just apply to emergency elevators rather than all elevators. The language in the proposal should emphasize that the two-way communication in the elevator car is for everyone, including persons who have speaking or hearing disabilities. All of the testifiers seem to have the same intent - they need to work together to resolve the conflicts in the current language. ASME A17.1 has included criteria for these systems. The proposal needs to provide more specific direction. (Vote: 14-0)

Public Comments

Public Comment 1

Proponents: Kevin Brinkman, National Elevator Industry, Inc., National Elevator Industry, Inc. (klbrinkman@neii.org) requests As Modified by Public Comment

Replace as follows:

2021 International Building Code

3001.2 Elevator emergency ~~Emergency elevator communication systems for the deaf, hard of hearing and speech impaired.~~ An elevator emergency two-way communication system shall be provided. ~~The system shall provide visible text that includes both visual and audible communication modes that meet all of the following requirements complying with the requirements in ASME A17.1/CSA B44. They system shall provide a means to enable authorized personnel to verify:~~

1. The presence of someone in the car.
2. That the person(s) is trapped.

Once an entrapment is verified, the system shall enable authorized personnel to:

1. Determine if assistance is needed. ~~When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.~~
2. Communicate when help is on the way. ~~Is operational when the elevator is operational.~~
3. Communicate when help arrives on site. ~~Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.~~

Commenter's Reason: This code requirement was first introduced in the 2018 edition and it was revised in the 2021 edition in an effort to clarify the requirements; however, as written it does not provide the necessary technical requirements to ensure consistent implementation. Consistent implementation is vital to making the system usable by all people, not just those with hearing or speech loss. Traditionally, the building code has provided the scoping for elevators and the technical criteria for the elevators has been in the ASME A17.1/CSA B44 Safety Code for Elevators and Escalators (elevator code). The 2019 edition of the elevator code includes significant changes to address the concerns raised by the proponent of the original code change to the IBC and provides the needed technical guidance for the elevator manufacturer and the elevator inspection to ensure consistent implementation. The ASME committee that developed the requirements invited the proponent of the original IBC requirement and other members representing the disability community to participate in the code process. The resulting requirements were chosen in order to serve the broadest number of people who may not be able to communicate verbally. Suggestions for ASL and other methods were not as desirable because they would be limited to a small portion of the potential users. As written, the elevator code requirements also make the system more accessible to people who may speak a different language or who cannot speak for any due to a medical condition.

A key element of the new ASME requirements is the provision for a means (video) to show the entire floor area of the car. The concern raised by the proponent and with entrapments in the past that were not immediately answered because there was no response from the car. These concerns are alleviated by the visual means because the authorized person at the call center can see that someone is in the car and immediately dispatch help. This means would verify the presence of the person whether they could speak or not, including identifying someone who has suffered a medical situation and may be lying on the floor. The ASME requirements also provide for a means to ask question and receive responses from the persons in the car usually both audio and visual means. This can be in the form of questions with "yes" or "no" answers that can be answered by pressing the appropriate button or by providing a means in the car to text answers. The attached sheet shows one example of how this is currently being addressed in the field. The current language in 3001.2 only requires the system to be operational when the elevator is operational. Most entrapments occur because the elevator goes out of service but based on the 3001.2 language the system is not required to be functional at that time. The ASME language requires the system to be operational 24 hours per day/7 days a week which corrects this issue. .

Elevator emergency communication systems have been in the elevator code for many years. It is important to note that the intent of the system is to notify authorized personnel who can take action in case of an elevator entrapment. It is not designed for lengthy conversation.

The communication system is required to be directed to authorized personnel 24 hours per day/7 days a week. The system must automatically relay the building location and elevator car number to authorized personnel without input from the passenger. The system is also required to do a daily self-check to ensure it is operating properly. The system does not automatically direct calls to the 911 system because the sheer volume of calls would overwhelm that system. Authorized personnel at call centers receive tens of millions of calls per year. Studies have shown that over 90% of these calls are nuisance calls (accidental due to crowded elevators, kids playing pranks, etc.).

The revised proposal below addresses concerns raised by opponents and the committee to the previous NEII proposal while providing more guidance for designers and building officials. It also aligns with the requirements in the elevator code. Specifically, this revised proposal:

- Updates the title to clarify that the system is for use by all passengers, not just those with hearing or speech loss.
- Relocates the word "elevator" before emergency two-way communications in the title and the text based on a concern expressed by the committee member that it could be perceived to only apply to emergency elevators, even though the original title had "elevator" after "emergency".
- Retains "two-way" based on a concern raised by one of the opponents even though it is already addressed in the elevator code.
- Adds specific functions that the system must be able to provide to assess whether someone is in the car and that they are entrapped. Also provides the capability to determine if assistance is needed, to communicate when help is on the way and when help has arrived on site. These are the basic steps that are needed to assess the situation and take appropriate action.
- Directs users of the code to the elevator code requirements for a more detailed description of the system requirements.

Two-Way Elevator Emergency Communications Visual Device

For compliance to the latest codes



The device gives riders the option to communicate visually by answering on-screen questions.

Two-Way Emergency Communications Visual Device

The ASME A17.1-2019 and IBC 2018 codes require in-elevator two-way emergency communication systems for the hearing impaired.

The Two-Way Emergency Communications Visual Device is easily integrated into your Schindler elevator during the construction process and complies with these codes.

Easy-to-use interface

In the event of an emergency, riders can call for help using the call/phone button inside the elevator on the Two-Way Emergency Communications Visual Device.

Once the call is made, riders have the option to communicate with dispatchers via standard voice communications, or visually by answering questions that appear on the device's easy-to-read screen.

To answer the Yes or No questions on the device, riders simply use its red and green buttons.

Video camera for visual assessment inside the elevator

The Two-Way Emergency Communications Visual Device also includes a video camera that becomes activated when a rider makes a call for help using its call/phone button. The video camera quickly provides dispatchers a visual assessment of the situation inside of the elevator.

Programmable connectivity

The device can be programmed to connect to the Schindler Customer Service Network, or to another point of contact as designated by the building owner or operations manager.

For more information, please contact your Schindler sales representative.



The Two-Way Emergency Communications Visual Device easily integrates into your Schindler elevator.

We Elevate





Schindler – We Elevate

For more information, including the location of the Schindler office nearest you, please visit:

U.S. Headquarters, Monticello, New Jersey
Tel: 872.287.6100
www.us.schindler.com

Canada Headquarters, Toronto, Ontario
Tel: 416.332.8288
www.ca.schindler.com

We Elevate

Schindler has been certified to ISO 9001 and ISO 14001 standards.

Schindler is an equal opportunity employer. Minorities and women are encouraged to apply.

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Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction. The proposal will neither increase nor decrease the cost of construction because the requirements in the A17.1-2019/CSA B44:19 code already need to be complied with per Section 3001.3 Referenced Standards and the proposal is clarifying requirements to ensure more consistent implementation.

Final Hearing Results	
G177-21	AMPC1

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

5

SP11062		/G178-21		5	
Date Submitted	03/14/2024	Section	3001.2	Proponent	Mo Madani
Chapter	30	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC.

Summary of Modification

This proposal is submitted as there is no new standard published, as of this writing, under the ASME A17.1 in support of IBC 2018 Section 3001.2. This code proposal also provides additional direction and clarification for industry.

Rationale

See attached

SP11062Text Modification

See attached

G178-21

Original Proposal

IBC: 3001.2

Proponents: Andrew Cid, BARRIER FREE SOLUTIONS FOR THE DEAF AND HARD OF HEARING, BARRIER FREE SOLUTIONS FOR THE DEAF AND HARD OF HEARING

2021 International Building Code

Revise as follows:

3001.2 Emergency elevator communication systems for the deaf, hard of hearing and speech impaired. An emergency two-way communication system shall be provided in each elevator car. The system shall provide visible text and audible modes that meet all of the following requirements:

1. When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.
2. Is operational when the elevator is operational.
3. Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.

Reason: This proposal is submitted as there is no new standard published, as of this writing, under the ASME A17.1 in support of IBC 2018 Section 3001.2. This code proposal also provides additional direction and clarification for industry. Underlined wording is added text to capture the intent of the proposal. This proposal clarifies as to what type of feature and assistance is required and shall be provided regards to the utilization of a text-based system (consisting of keyboard, visual indicators and button indicators) by an entrapped Deaf or Hard of Hearing passenger(s). I have been working with a dedicated group of industry professionals who have been working hard to develop an A17.1 standard for Section 3001.2. My participation in these ASME efforts for the past 6 years have been exciting and productive in attempting to improve the standard to include criteria for these systems. However, I will continue working to provide assistance to industry, to Fire/Life Safety and First Responders in their jobs in helping others, and to provide access to 50M Deaf & Hard of Hearing citizens. I hope the IBC committee, industry representatives, and the ICC voters, especially the professional First Responders, agree with this proposal. If approved, this will be effective 2024 and the next A17.1 will hopefully be in place by then to support Section 3001.2.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification of requirements for elevator cars, and is already required.

Public Hearing Results

Committee Action
As Submitted

Committee Reason: This proposal was approved because two-way communication is already required by ASME A17.1 in each elevator car. This change just re-emphasizes that requirement. (Vote: 14-0)

Final Hearing Results

G178-21

AS

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Building

SP11063		/G180-21		6	
Date Submitted	03/14/2024	Section	3002.1	Proponent	Mo Madani
Chapter	30	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

FBC - 716.5.9 Door closing.

Summary of Modification

The intent of this proposal is consistent terminology for elevator protection. The current text is very inconsistent. This is not intended to have any technical changes.

Rationale

See attached

SP11063Text Modification

See attached

Page: 1

Mod11063_TextOfModification.pdf

G180-21

Original Proposal

IBC: 713.14, 716.2.6.1, 3002.1, 3002.1.1, 3002.1.2, 3002.2, 3002.6, SECTION 3006, 3006.1, 3006.2, 3006.3

Proponents: Mike Nugent, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, Chair, FCAC (fcac@iccsafe.org)

2021 International Building Code

SECTION 3002 HOISTWAY ENCLOSURES

Revise as follows:

3002.1 Hoistway enclosure protection. ~~Elevator, dumbwaiter and other hoistway enclosures shall be shaft enclosures complying with Sections 712 and 713. A hoistway for elevators, dumbwaiters and other vertical access devices shall be comply with Sections 712 and 713. Where the hoistway is required to be enclosed it shall be constructed as a shaft enclosure in accordance with Section 713.~~

3002.1.1 Opening protectives. Openings in fire-resistant rated hoistway enclosures shall be protected as required in Chapter 7.

Exception: The elevator car doors and the associated elevator hoistway enclosure doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I Emergency Recall Operation.

3002.1.2 Hardware. Hardware on ~~opening protectives~~ elevator hoistway doors shall be of an *approved* type installed as tested, except that *approved* interlocks, mechanical locks and electric contacts, door and gate electric contacts and door-operating mechanisms shall be exempt from the fire test requirements.

3002.2 Number of elevator cars in a hoistway. Where four or more elevator cars serve all or the same portion of a building, the elevators shall be located in not fewer than two separate fire-resistance rated hoistways. Not more than four elevator cars shall be located in any single fire-resistance rated hoistway enclosure.

3002.6 Prohibited doors or other devices. ~~Doors or other devices, other than hoistway doors and the elevator car door and the associated elevator hoistway doors, shall be prohibited at the point of access to an elevator car unless such doors or other devices are readily openable from inside the car side without a key, tool, special knowledge or effort.~~

SECTION 3006 ELEVATOR LOBBIES AND HOISTWAY OPENING DOOR PROTECTION

3006.1 General. ~~Elevator hoistway openings and enclosed~~ Enclosed elevator lobbies and elevator hoistway door protection shall be provided in accordance with the following:

1. Where elevator hoistway door opening protection is required by Section 3006.2, such protection shall be provided in accordance with Section 3006.3.
2. Where enclosed elevator lobbies are required for underground buildings, such lobbies shall comply with Section 405.4.3.
3. Where an *area of refuge* is required and an enclosed elevator lobby is provided to serve as an *area of refuge*, the enclosed elevator lobby shall comply with Section ~~1009.6~~ 1009.6.4.
4. Where fire service access elevators are provided, enclosed elevator lobbies shall comply with Section 3007.6.

5. Where occupant evacuation elevators are provided, enclosed elevator lobbies shall comply with Section 3008.6.

3006.2 Elevator hoistway door Hoistway-opening protection required. Elevator hoistway ~~door-openings~~ doors shall be protected in accordance with Section 3006.3 where an elevator hoistway connects more than three *stories*, is required to be enclosed within a *shaft enclosure* in accordance with Section 712.1.1 and any of the following conditions apply:

1. The building is not protected throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1 or 903.3.1.2.
2. The building contains a Group I-1, Condition 2 occupancy.
3. The building contains a Group I-2 occupancy.
4. The building contains a Group I-3 occupancy.
5. The building is a high rise and the elevator hoistway is more than 75 feet (22 860 mm) in height. The height of the hoistway shall be measured from the *lowest floor* to the highest floor of the floors served by the hoistway.

Exceptions:

1. Protection of elevator hoistway ~~door-openings~~ doors ~~are~~ is not required where the elevator serves only *open parking garages* in accordance with Section 406.5.
2. Protection of elevator hoistway ~~door-openings~~ doors ~~are~~ is not required at the level(s) of exit discharge, provided that the level(s) of exit discharge is equipped with an *automatic sprinkler system* in accordance with Section 903.3.1.1.
3. ~~Enclosed elevator lobbies and protection~~ Protection of elevator hoistway ~~door-openings~~ doors are not required on levels where the elevator hoistway door opens to the exterior.

3006.3 Elevator hoistway door Hoistway-opening protection. Where Section 3006.2 requires protection of the elevator hoistway door opening, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistways ~~shaft enclosure~~ doors from each floor by *fire partitions* in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.2.2.1 as required for *corridor* walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistways ~~shaft enclosure~~ doors from each floor by *smoke partitions* in accordance with Section 710 where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the *smoke partitions* shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
3. Additional doors or other devices shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door or other devices shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.
4. The elevator hoistway shall be pressurized in accordance with Section 909.21.

713.14 Elevator, dumbwaiter and other hoistways. ~~Elevator, dumbwaiter and other hoistway enclosures shall be constructed in accordance with Sections 712 and~~ A hoistway for elevators, dumbwaiters and other vertical devices shall comply with Section 712. Where the hoistway is required to be enclosed, it shall be constructed as a shaft enclosure in accordance with Section 713, and Chapter 30.

716.2.6.1 Door closing. *Fire doors* shall be latching and self- or automatic-closing in accordance with this section.

Exceptions:

1. *Fire doors* located in common walls separating *sleeping units* in Group R-1 shall be permitted without automatic- or self-closing devices.
2. The elevator car doors and the associated elevator hoistway ~~enclosure~~ doors at the floor level designated for recall in accordance with Section 3003.2 shall be permitted to remain open during Phase I emergency recall operation.

Reason: The intent of this proposal is consistent terminology for elevator protection. The current text is very inconsistent. This is not intended to have any technical changes.

The elevator industry considers an elevator hoistway the vertical movement of that device, whether it be in a rated enclosure, in non-rated enclosure, or not enclosed at all. The photos are examples of hoistways that are the non-rated enclosure and the open hoistway.



Example of elevator hoistways that are not in rated enclosures.

The intent of this proposal is consistent terminology for elevator protection. The current text is very inconsistent. This is not intended to have any technical changes. The elevator industry considers an elevator hoistway the vertical movement of that device, whether it be in a rated enclosure, in non-rated enclosure, or not enclosed at all. The photos are examples of hoistways that are the non-rated enclosure and the open hoistway.



Examples of doors or other devices in front of associated elevator entrance doors - see Section 3002.6 and 3006.3 Item 3

This proposal is submitted by the ICC Building Code Action Committee (BCAC) in cooperation with the ICC Fire Code Action Committee (FCAC).

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 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This is a clarification of the terminology for elevator hoistways, and shaft protection and the associated elevator doors and has no changes to the construction.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: This proposal was approved as it applies consistent terminology for elevators and their protections. The cleanup is helpful and should simplify compliances. There was a question about the area of refuge reference in Section 3006.1 Item 3, but Section 1009.6.4 this is the correct reference for area of refuge separation, which is what Section 3006.1 is about. (Vote: 14-0)

Final Hearing Results

SP11063Text Modification

G180-21

AS

Page: 5

Mod_11063_Text_G180-21.pdf

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

SP11065		/G183-21 Part I		7	
Date Submitted	03/14/2024	Section	3006	Proponent	Mo Madani
Chapter	30	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

Summary of Modification

The intent of this proposal is to clarify lobby protection requirements – which walls are fire barriers, fire partitions or smoke barriers. This will also clarify what requirements are applicable for the elevator hoistway doors vs. the doors in the other walls of the lobby protection.

Rationale

See attached

SP11065Text Modification

See attached

Page: 1

Mod11065_TextOfModification.pdf

G183-21 Part I

Original Proposal

PART I - IBC: SECTION 3006, 3006.3, 3007.6.2, 3007.6.3, 3008.6.1, 3008.6.2, 3008.6.3, 3008.6.3.1, 3008.6.3.2

PART II - IBC: 708.4.1 (New), 709.4.2, 710.4.1 (New)

Proponents: Mike Nugent, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, Chair, FCAC (fcac@iccsafe.org)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE GENERAL CODE COMMITTEE. PART II WILL BE HEARD BY THE FIRE SAFETY CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Building Code

Revise as follows:

SECTION 3006 ELEVATOR LOBBIES AND HOISTWAY OPENING DOOR PROTECTION

3006.3 Hoistway-opening Elevator hoistway door protection. Where Section 3006.2 requires protection of the elevator hoistway ~~door opening doors~~, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway ~~shaft enclosure~~ doors from each floor ~~by with fire partitions~~ in accordance with Section 708. In addition, doors protecting openings in the ~~elevator lobby enclosure walls~~ fire partitions shall comply with Section 716.2.2.1 ~~as required for corridor walls~~. Penetrations of the ~~enclosed elevator lobby fire partitions~~ by ducts and air transfer openings shall be protected as required ~~for corridors~~ in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway ~~shaft enclosure~~ doors from each floor ~~by with smoke partitions~~ in accordance with Section 710 ~~where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2~~. In addition, doors protecting openings in the ~~smoke partitions~~ shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the ~~enclosed elevator lobby smoke partitions~~ by ducts and air transfer openings shall be protected as required ~~for corridors~~ in accordance with Section 717.5.4.1.
3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such door shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.
4. The elevator hoistway shall be pressurized in accordance with Section 909.21.

SECTION 3007 FIRE SERVICE ACCESS ELEVATOR

Revise as follows:

3007.6.2 Elevator lobby Lobby enclosure. The fire service access elevator lobby shall be ~~enclosed~~ separated from each floor with a smoke barrier in accordance with Section 709 ~~having a fire-resistance rating of not less than 1-hour~~, except that lobby doorways shall comply with Section 3007.6.3.

Exception: Enclosed fire service access elevator lobbies are not required at the ~~levels of exit discharge~~.

3007.6.3 Lobby Elevator lobby doorways. Other than doors to the ~~hoistway~~, elevator control room or elevator control space, each ~~door doorway to an enclosed fire service access elevator lobby in the smoke barrier~~ shall be provided with a $\frac{3}{4}$ -hour fire door assembly

complying with Section 716. ~~The Such fire door assembly~~ shall comply with the smoke and draft control door assembly requirements of Section 716.2.2.1.1 and be tested in accordance with UL 1784 without an artificial bottom seal.

SECTION 3008 OCCUPANT EVACUATION ELEVATORS

Revise as follows:

3008.6.1 Access to interior exit stairway or ramp. The occupant evacuation elevator lobby shall have *direct access* from the enclosed elevator lobby to an *interior exit stairway or ramp*.

Exceptions:

1. Access to an *interior exit stairway or ramp* shall be permitted to be through a protected path of travel that has a level of fire protection not less than the elevator lobby enclosure. The protected path shall be separated from the enclosed elevator lobby through an opening protected by a smoke and draft control assembly in accordance Section ~~716.2.2.1~~ 716.2.2.1.1.
2. Elevators that only service an *open parking garage* and the elevator lobby of the building shall not be required to provide *direct access*.

3008.6.2 Elevator lobby Lobby enclosure. The occupant evacuation elevator lobby shall be ~~enclosed~~ *separated from each floor* with a *smoke barrier* in accordance with Section 709 ~~having a fire-resistance rating of not less than 1 hour~~, except that lobby doorways shall comply with Section 3008.6.3.

Exception: Enclosed occupant evacuation elevator lobbies are not required at the *levels of exit discharge*.

3008.6.3 Elevator lobby Lobby doorways. Other than the doors to the ~~hoistway~~, elevator machine rooms, machinery spaces, control rooms and control spaces ~~within the lobby enclosure in the smoke barrier~~, each doorway to an occupant evacuation elevator lobby shall be provided with a $\frac{3}{4}$ -hour *fire door assembly* complying with Section 716. ~~The Such fire door assembly~~ shall comply with the smoke and draft control assembly requirements of Section 716.2.2.1.1 and be tested in accordance with UL 1784 without an artificial bottom seal.

3008.6.3.1 Vision panel. A vision panel shall be installed in each *fire door assembly protecting the lobby doorway in the smoke barrier*. The vision panel shall consist of fire-protection-rated glazing, shall comply with the requirements of Section 716 and shall be located to furnish clear vision of the occupant evacuation elevator lobby.

3008.6.3.2 Door closing. Each *fire door assembly protecting the lobby doorway in the smoke barrier* shall be automatic-closing upon receipt of any fire alarm signal from the *emergency voice/alarm communication system* serving the building.

Reason: The intent of this proposal is to clarify lobby protection requirements – which walls are fire barriers, fire partitions or smoke barriers. This will also clarify what requirements are applicable for the elevator hoistway doors vs. the doors in the other walls of the lobby protection. The current language is inconsistent for the locations where elevator lobbies are specified. This protection of elevator lobbies is a combination of the elevator hoistway and exit stairway (direct access to a stairway is required for fire service an occupant evacuation elevator lobbies) shaft enclosure/fire barriers and the fire partitions or smoke barriers required for lobbies (405.4.3, 3006.3, 3007.6.2 and 3008.6.2) The intent of new 708.4.1 and revised 709.4.2 is to clarify that the fire partitions/smoke barrier criteria is not applicable to all the walls of the elevator lobby since the vertical shaft/fire barrier protections is adequate. Fires typically happen in the occupied portions of the buildings, not within the elevator shaft or the stairway. In addition, in situations where an elevator lobby is provided, the elevator shafts are double protected from smoke intrusion from a fire on the floor.

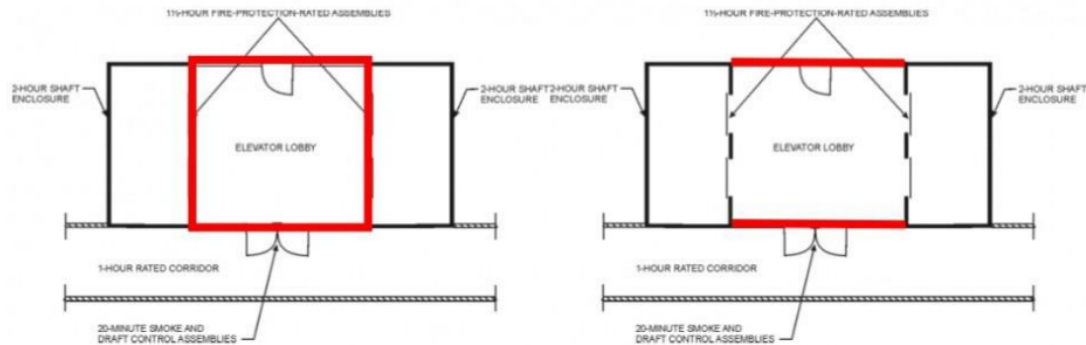


Diagram for elevator lobby barriers

Diagram for which walls are fire partitions, smoke partitions or smoke barriers

Provisions for horizontal continuity are addressed for smoke barriers that surround elevator lobbies or areas of refuge. The same horizontal continuity should be addressed for elevator lobbies enclosed with fire partitions in Section 3006.3 Item 1 or smoke partitions in Section 3006.3 Item 2. The movement of 'smoke barrier wall' just assures a minimum fire resistance rating. The last sentence in 709.4.2 is not needed with the clarification of which walls meet which requirements in Chapter 30. The reference to sprinklers is not needed in Section 3006.3 Item 2, because this is already a limitation in Section 3006.2. Taking it out makes this item easier to read. In addition, this could currently be read to not allow smoke barriers to form elevator lobbies in non-sprinklered buildings. Smoke barriers provide equal or better protection than fire partitions.

This proposal is submitted by the ICC Building Code Action Committee (BCAC) and the ICC Fire Code Action Committee (FCAC).

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 2020 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at BCAC.

The FCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes with regard to fire and life safety in new and existing buildings and facilities as well as the protection of life and property in wildland urban interface areas. In 2020 and 2021 the Fire-CAC held multiple virtual meetings that were open to any interested party. In addition, there were numerous virtual specific working group meetings that were also open to any interested parties, to develop, discuss and debate the proposed changes. Related documentation and reports are posted on the FCAC website at: FCAC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This is a clarification for elevator lobby requirements. While technical criteria was added for horizontal continuity for fire partitions and smoke partitions at elevator lobbies, this was implied previously and does not add cost to construction.

Public Hearing Results

Committee Action

As Modified

Committee Modification: 3007.6.2 Elevator lobby enclosure separation. The fire service access elevator lobby shall be separated from each floor with a smoke barrier in accordance with Section 709, except that lobby doorways shall comply with Section 3007.6.3.

Exception: ~~Enclosed fire~~ Fire service access elevator lobbies are not required ~~to be separated~~ at the levels of exit discharge.

3008.6.2 Elevator lobby enclosure separation. The occupant evacuation elevator lobby shall be separated from each floor with a smoke barrier in accordance with Section 709, except that lobby doorways shall comply with Section 3008.6.3.

Exception: ~~Enclosed occupant~~ Occupant evacuation elevator lobbies are not required ~~to be separated~~ at the levels of exit discharge.

SP11065Text Modification

Committee Reason: The modification provides better language for consistency by using 'separated' instead of 'enclosed' for lobbies. The proposal is a good clean up of the language for which walls make up the elevator lobby and provides consistency between the general lobbies, fire service access elevators lobbies and occupant evacuation elevator lobbies. (Vote: 14-0)

Final Hearing Results

G183-21 Part I

AM

Page: 4

Mod_11065_Text_G183-21 Part I.pdf

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

8

SP11067		/G185-21			
Date Submitted	03/14/2024	Section	3006.3	Proponent	Mo Madani
Chapter	30	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

This code change is already part of the FBC.

Summary of Modification

Smoke protective curtain assemblies for hoistways are recognized and regulated in NFPA 105 Chapter 9 (2019). There are multiple manufactures of these assemblies in the market. Proposal to address. Definition "SMOKE PROTECTIVE CURTAIN ASSEMBLY FOR HOISTWAY" added.

Rationale

See attached

SP11067Text Modification

See attached

Page: 1

Mod11067_TextOfModification.pdf

G185-21

Original Proposal

IBC: SECTION 202 (New), 3006.3

Proponents: Curtis Gonzales, Smoke Guard, Inc., Smoke Guard, Inc. (curtis.gonzales@smokeguard.com); Amanda Hickman, The Hickman Group, SmokeGuard, Inc. (amanda@thehickmangroup.com)

2021 International Building Code

Add new definition as follows:

SMOKE PROTECTIVE CURTAIN ASSEMBLY FOR HOISTWAY

An automatic closing smoke and draft control curtain assembly.

Revise as follows:

3006.3 Hoistway opening protection. Where Section 3006.2 requires protection of the elevator hoistway door opening, the protection shall be provided by one of the following:

1. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by *fire partitions* in accordance with Section 708. In addition, doors protecting openings in the elevator lobby enclosure walls shall comply with Section 716.2.2.1 as required for *corridor* walls. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
2. An enclosed elevator lobby shall be provided at each floor to separate the elevator hoistway *shaft enclosure* doors from each floor by *smoke partitions* in accordance with Section 710 where the building is equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. In addition, doors protecting openings in the *smoke partitions* shall comply with Sections 710.5.2.2, 710.5.2.3 and 716.2.6.1. Penetrations of the enclosed elevator lobby by ducts and air transfer openings shall be protected as required for *corridors* in accordance with Section 717.5.4.1.
3. Additional doors shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such ~~doors~~ doors shall comply with the smoke and draft control door assembly requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal.
4. The elevator hoistway shall be pressurized in accordance with Section 909.21.
5. A smoke protective curtain assembly for hoistways shall be provided at each elevator hoistway door opening in accordance with Section 3002.6. Such curtain assemblies shall comply with the smoke and draft control requirements in Section 716.2.2.1.1 when tested in accordance with UL 1784 without an artificial bottom seal. Such curtain assemblies shall be equipped with a control unit listed to UL 864. Such curtain assemblies shall comply with section 2.11.6.3 of ASME A17.1/CSA B44. Installation and maintenance shall be in accordance with NFPA 105

Reason: *Smoke protective curtain assemblies for hoistways* are recognized and regulated in NFPA 105 Chapter 9 (2019). There are multiple manufactures of these assemblies in the market. These products have been in the market for 25 years with tens of thousands of successful installations. Smoke protective curtain assemblies provide a proven means for smoke and draft control at the hoistway door that enables design freedom and innovation. Smoke protective curtain assemblies for hoistways should be allowed to provide smoke and draft protection where enclosed elevator lobbies are not required.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The cost of this option for hoistway opening protection is offset by the cost of other forms of protection. As such, the cost of construction for adding option five does not raise or lower the cost of construction.

SP11067 Text Modification

Public Hearing Results**Committee Action****As Submitted**

Committee Reason: The proposal was approved as this modification allows for smoke protective curtain assemblies to be used at elevator doors to meet the smoke protection requirements for rated corridors. The UL 864 listing for the controller is appropriate. Some committee members felt this option was already permitted as an alternative to Section 3006.3 Item 3. (Vote: 8-7)

Final Hearing Results

G185-21

AS

Page: 2

Mod_11067_Text_G185-21.pdf

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Building

SP11068		/G187-21		9	
Date Submitted	03/14/2024	Section	3007.6	Proponent	Mo Madani
Chapter	30	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Overlap
Commission Action	Pending Review			Classification	

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC.

Summary of Modification

Adds Exception to Section 3007.6. Concerning "A fire service access elevator lobby is not required to be provided at an occupied roof".

Rationale

See attached

SP11068Text Modification

See attached

Page: 1

Mod11068_TextOfModification.pdf

G187-21

Original Proposal

IBC: 3007.6

Proponents: Stephen Thomas, Colorado Code Consulting, LLC, Colorado Chapter ICC (stthomas@coloradocode.net)

2021 International Building Code

Revise as follows:

3007.6 Fire service access elevator lobby. The fire service access elevator shall open into an enclosed fire service access elevator lobby in accordance with Sections 3007.6.1 through 3007.6.5. Egress is permitted through the enclosed elevator lobby in accordance with Item 1 of Section 1016.2.

ExceptionExceptions:

1. Where a fire service access elevator has two entrances onto a floor, the second entrance shall be permitted to be protected in accordance with Section 3006.3.2.
2. A fire service access elevator lobby is not required to be provided at an occupied roof.

Reason: We do not believe that it is necessary to have a fire service access elevator lobby at an occupied roof. There is no purpose for having such an elevator. the purpose of the lobby is to provide a staging area for the fire department to access the floor(s) above. There are no floors above an occupied roof. Therefore, the requirements for the FSAE lobby is unnecessary at that level. This exception maintains the reasonable level of access to the occupied roof, but does not require all of the requirements for the lobby.

Cost Impact: The code change proposal will decrease the cost of construction
Eliminating the requirements for a FSAE lobby at the occupied roof level will reduce the cost of construction.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: This proposal was approved because the committee agreed that a lobby for fire department staging or assisted rescue was not needed at the roof level. The additional expense is not justified and there was a concern that this lobby would be considered an additional floor for building height. As editorial, the committee requested that the new exception coordinate "occupied roof" with the "occupiable roof" approved in G21-21 Part 1. (Vote: 14-0)

Final Hearing Results

G187-21

AS

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

10

SP11069		/G188-21		10	
Date Submitted	03/14/2024	Section	3009	Proponent	Mo Madani
Chapter	30	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	
Commission Action	Pending Review				Overlap

Comments

General Comments No

Related Modifications

Conflict with section 3013.

Summary of Modification

The proposed language increases awareness for the building designers, contractors and building code officials to the need to mitigate this serious hazard, while retaining the actual code requirements in ASME A17.1/CSA B44. Adds Section 3009 "PRIVATE RESIDENCE ELEVATORS".

Rationale

See attached

SP11069Text Modification

See attached

Page: 1

Mod11069_TextOfModification.pdf

G188-21

Original Proposal

IBC: SECTION 3009 (New), 3009.1 (New), 3009.2 (New), 3009.3 (New)

Proponents: Kevin Brinkman, National Elevator Industry, Inc., National Elevator Industry, Inc. (klbrinkman@neii.org)

2021 International Building Code

Add new text as follows:

SECTION 3009 **PRIVATE RESIDENCE ELEVATORS**

3009.1 General. The design, construction, installation, alteration, repair and maintenance of elevators installed within a residential dwelling unit or installed to provide access to one individual residential dwelling unit shall conform to ASME A17.1/CSA B44, Section 5.3.

3009.2 Hoistway Enclosures. Hoistway enclosures shall comply with ASME A17.1/CSA B44, Requirement 5.3.1.1.

3009.3 Hoistway Opening Protection. Hoistway landing doors for private residence elevators shall comply with ASME A17.1/CSA B44, Requirements 5.3.1.8.1 through 5.3.1.8.3.

Reason: Excessive clearances between the car door and the hoistway door on private residence elevators presents a serious hazard to young children and slight built adolescents or adults. Proper installation of the hoistway landing doors is critical to ensuring the gap between the hoistway door and the car door or gate does not exceed a 4 inch gap. The 4 inch maximum clearance is based on anthropometric data for young children. However, private residence elevators are not inspected by elevator inspectors in most jurisdictions and the few jurisdictions that do inspect them are mostly limited to the installation of new equipment. On the other hand, almost all private residence construction is inspected by construction officials.

The General Contractor typically constructs the hoistway enclosure and installs the hoistway doors on private residence elevators. Ensuring the installation of the hoistway doors so that the clearance between the hoistway door and the landing sill does not exceed the 0.75 inch requirement in ASME A17.1/CSA B44, will greatly increase the likelihood that the clearance between the hoistway and car doors will comply with the 4 inch gap. The proposed language increases awareness for the building designers, contractors and building code officials to the need to mitigate this serious hazard, while retaining the actual code requirements in ASME A17.1/CSA B44.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

There is no additional cost because these requirements are already contained in the A17.1/B44 code referenced in Section 3001.3. This is being added to alert builders to these requirements.

Public Hearing Results

Committee Action

As Modified

Committee Modification: 3009.1 General. The design, construction, ~~and installation, alteration, repair and maintenance~~ of elevators installed within a residential dwelling unit or installed to provide access to one individual residential dwelling unit shall conform to ASME A17.1/CSA B44, Section 5.3.

SP11069Text Modification

Committee Reason: The modification was because the alteration, maintenance and repair of a private residence elevators is regulated by the property maintenance code. The proposal was approved as the text will address a safety issue for private residence elevator installations. This provides direction for inspectors. (Vote: 10-4)

Final Hearing Results

G188-21

AM

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Mod_11069_Text_G188-21.pdf

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

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SP11074		/G194-21			
Date Submitted	03/14/2024	Section	3101.1	Proponent	Mo Madani
Chapter	31	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the FBC.

Summary of Modification

Deletes the Section 3114 "PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS".

Rationale

See attached

SP11074 Text Modification

See attached

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Mod11074_ TextOfModification.pdf

G194-21

Original Proposal

IBC: 3101.1, SECTION 3114, 3114.1, 3114.2

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Building Code

Revise as follows:

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, solar energy systems, ~~public-use restroom buildings on publicly owned lands in flood hazard areas and intermodal shipping containers.~~

Delete without substitution:

SECTION 3114

PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS

3114.1 General. 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. Public restroom buildings and portions of buildings 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 3114.2. Portions of buildings that include uses other than public-use toilet rooms, bathrooms, showers and changing rooms shall comply with Section 1612.~~

3114.2 Flood resistance. Public-use restrooms 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:

1. ~~The building footprint is not more than 1,500 square feet (139 m²).~~
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 and includes building design documents specifying implementation of protection measures prior to the onset of flooding conditions.~~

Exceptions:

1. Minimum necessary electric equipment required to address health, life safety and electric code requirements is permitted below the base flood elevation in accordance with ASCE 24 provisions for electric elements installed below the minimum elevations.

2. Plumbing fixtures and connections are permitted below the ~~base flood elevation~~ provided that 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.

Reason: Section 3114 was added to the 2021 IBC by code change proposal G149-18. The proponents were Florida Division of Emergency Management and Building Officials Association of Florida. The Florida Building Commission rejected a proposal by the FDEM to include Section 3114 in the process of developing the 7th edition of the Florida Building Code (FBC). Section 553.73 of the Florida Statutes specifies that, at a minimum, the Commission must "adopt any updates to such codes or any other code necessary to maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development." As part of the deliberation of code change proposal G149-18, FEMA submitted a statement explaining the proposal is not consistent with the NFIP and could increase public disaster recovery costs by allowing at-risk public facilities. Because Section 3114 does not meet requirements necessary to maintain NFIP eligibility, the section will not be included in the 7th Edition FBC.

Public use restrooms in flood hazard areas in communities that participate in the NFIP must either meet the elevation requirements of ASCE 24 for Flood Design Class 2 or be dry floodproofed to that same elevation, which is the base flood elevation plus 1 foot. Many coastal communities successfully elevate restrooms in beachfront parks, and many communities elevate or dry floodproof restrooms in public lands along rivers and streams. Of the more than 22,700 communities identified by FEMA as having some degree of flood risk, more than 21,000 elect to participate in the NFIP (as of mid-2019).

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal may add to construction costs for some restrooms that might have been designed in accordance with Sec. 3114 depending on height of elevation above the ground, construction of ramps, and/or installation of elevators for ADA compliance. However, this proposal does not change the cost of new public use restrooms in communities that already require them to be elevated or dry floodproofed in accordance with the minimum requirements of the NFIP.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: The proposal submitted by FEMA was approved as submitted as per the reason statement. The proposal resolves an existing discontinuity. (Vote: 14-0)

Final Hearing Results

G194-21

AS

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Building

SP11673		/ADM52-22		12	
Date Submitted	05/14/2024	Section	35	Proponent	Mo Madani
Chapter	35	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Modification lists the updated standards in the IBC.

Rationale

See attached

SP11673Text Modification

See attached

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ADM52-22

ACCA		Air Conditioning Contractors of America	
Standard Reference Number	Title	Referenced in Code(s):	
ANSI/ACCA 1 Manual D— 2016 <u>2023</u>	Residential Duct Systems	IMC	IRC
ANSI/ACCA 10 Manual SPS — 2010 RA 2017	HVAC-Design for Swimming Pools and Spas	IMC	
ANSI/ACCA 3 Manual S— 14 <u>2023</u>	Residential Equipment Selection	IECC®	
ANSI/ACCA 3 Manual S— 2014 <u>2023</u>	Residential Equipment Selection	IRC	
ANSI/ASHRAE/ACCA 183—2007 (reaffirmed 2014)	Peak Cooling and Heating Load Calculations in Buildings Except Low-rise Residential Buildings	IMC	
AFSI		Architectural Fabric Structures Institute	
Standard Reference Number	Title	Referenced in Code(s):	
FSAAS—16 <u>AFSI-77</u>	Fabric Structures Associated Air Structures 2016 <u>Air Structures Design and Standards Manual</u>	IFC	
AHAM		Association of Home Appliance Manufacturers	
Standard Reference Number	Title	Referenced in Code(s):	
ANSI/AHAM RAC-1— 2015 <u>2020</u>	Room Air Conditioners	IECC®	
AHRI		Air-Conditioning, Heating, & Refrigeration Institute	
Standard Reference Number	Title	Referenced in Code(s):	
1160 (I-P)— 2014 <u>2022</u>	Performance Rating of Heat Pump Pool Heaters (with Addendum 1)	IECC®	
1160 (I-P)— 2014 <u>2022</u>	Performance Rating of Heat Pump Pool Heaters (with Addendum 1)	ISPSC	

1200 (I-P)— 2019 <u>2022</u>	Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets	IECC®
1230 (I-P)— 2014 <u>2021</u>	Performance Rating of Variable Refrigerant Flow (VRF) Multi-split Air-Conditioning and Heat Pump Equipment (with Addendum 1)	IECC®
1250 (I-P)— 2014 <u>(2020)</u>	Standard for Performance Rating in Walk-in Coolers and Freezers	IECC®
1360 (I-P)—2017	Performance Rating of Computer and Data Processing Room Air Conditioners	IECC®
210/240— 2017 and 2023 <u>(2020)</u>	Performance Rating of Unitary Air-conditioning and Air-source Heat Pump Equipment	IECC®
340/360— 2019 <u>2022</u>	Performance Rating of Commercial and Industrial Unitary Air-conditioning and Heat Pump Equipment	IECC®
390 (I-P)— 2009 <u>2021</u>	Performance Rating of Single Package Vertical Air-conditioners and Heat Pumps	IECC®
440 (I-P)— 2008 <u>2019</u>	Performance Rating of Room Fan Coils —with Addendum 1	IECC®
550/590 (I-P)— 2018 <u>2022</u>	Performance Rating of Water-chilling and Heat Pump Water-heating Packages Using the Vapor Compression Cycle	IECC®
560— 2018 <u>2000</u>	Absorption Water Chilling and Water Heating Packages	IECC®
700— 2017 <u>2019</u>	with Addendum 1 : Specifications for Refrigerants	IMC
910 (I-P)—2014	Performance Rating of Indoor Pool Dehumidifiers	IECC®
920 (I-P)— 2015 <u>2020</u>	Performance Rating of DX-Dedicated Outdoor Air System Units	IECC®

AISC		
American Institute of Steel		
Standard Reference Number	Title	Referenced in Code(s):
ANSI/AISC 341— 16 <u>22</u>	Seismic Provisions for Structural Steel Buildings	IBC
ANSI/AISC 360— 16 <u>22</u>	Specification for Structural Steel Buildings	IBC
ANSI/AISC 358— 16/s1 — 18 <u>22</u>	Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications, including Supplement No. 1	IBC
AISI		
American Iron and Steel Institute		
Standard Reference Number	Title	Referenced in Code(s):
AISI S100—16 (2020) w/S2—20:	North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition (Reaffirmed 2020), with Supplement 2, 2020 Edition	IBC
AISI S100—16 (2020) w/S2—20	North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition (Reaffirmed 2020), with Supplement 2, 2020 Edition	IRC®
ALI		
Automotive Lift Institute, Inc.		
Standard Reference Number	Title	Referenced in Code(s):
ALI ALCTV— 2016 <u>2022</u>	Standard for Automotive Lifts—Safety Requirements for Construction, Testing and Validation (ANSI)	IBC
AMCA		
Air Movement and Control Association International		
Standard Reference Number	Title	Referenced in Code(s):
ANSI/AMCA 550—09 (Rev. 09/10) <u>22</u>	Test Method for High Velocity Wind Driven Rain Resistant Louvers	IMC

<u>ANSI/AMCA 220—19 21</u>	Laboratory Methods of Testing Air Curtain Units for Aerodynamic Performance Rating	IECC®		
<u>ANSI/AMCA 230—15 23</u>	Laboratory Methods of Testing Air Circulating Fans for Rating and Certification	IMC	IECC®	
<u>ANSI/AMCA 540—13 23</u>	Test Method for Louvers Impacted by Wind Borne Debris	IBC		
<u>ANSI/AMCA 210-ANSI/ASHRAE 51—16 23</u>	Laboratory Methods of Testing Fans for Aerodynamic Performance Rating	IRC®		
<u>ANSI/AMCA 210—16/ANSI/ASHRAE 51—16</u>	Laboratory Methods of Testing Fans for Aerodynamic Performance Rating	IMC		
ANSI		American National Standards Institute		
Standard Reference Number	Title	Referenced in Code(s):		
<u>ANSI LC 4/CSA 6.32—2012</u> <u>CSA/ANSI LC 4:23/CSA 6.32:23</u>	Press-connect Metallic Fittings <u>and valves</u> for Use in Fuel Gas Distribution Systems	IFGC	IRC	
<u>ANSI/CSA FC 1—2014</u> <u>CSA/ANSI FC 1:21/CSA C22.2 NO. 62282-3-100:21</u>	Fuel Cell Technologies—Part 3-100: Stationary Fuel Cell Power Systems—Safety	IFGC	IMC	IRC®
<u>LC 1/CSA 6.26—2016</u> <u>CSA/ANSI LC 1:19/CSA 6.26:19</u>	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST)	IFGC	IRC®	
<u>ANSI Z21.41 (R2019)/CSA 6.9-2014 (R2019)</u>	Quick Disconnect Devices for Use with Gas Fuel Appliances	IFGC	IRC®	
<u>ANSI Z21.22—99 (R2003) 2015 (R2020)/CSA 4.4-2015 (R2020)</u>	Relief Valves for Hot Water Supply Systems with Addenda Z21.22a—2000 (R2003) and Z21.22b—2001 (R2003)	IPC	IRC®	
<u>ANSI Z21.24 -2015 (R2020)/CSA 6.10—2015 (R2020)</u>	Connectors for Gas Appliances	IFGC	IRC®	
<u>ANSI Z21.40.1-1996 (R2017)/CGA 2.91—1996 M96 (R2017)</u>	Gas-fired Heat Activated Air Conditioning and Heat Pump Appliances	IFGC	IRC	

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<u>ANSI Z21.50 :19/CSA 2.22— 2016 :19</u>	Vented Decorative Gas Fireplaces	IFGC	IRC®	
<u>ANSI Z21.69 :2015 (R2020)/CSA 6.16—2015 (R2020)</u>	Connectors for Movable Gas Appliances	IFGC	IRC®	
<u>ANSI Z21.75 :2016/CSA 6.27— 2016 (R2020)</u>	Connectors for Outdoor Gas Appliances and Manufactured Homes	IFGC	IRC®	
<u>ANSI Z83.11 :2016 (R2021)/CSA 1.8—2016 (R2021)</u>	Gas Food Service Equipment	IFGC		
<u>ANSI Z83.18—2017 (R2021)</u>	Recirculating Direct Gas-fired Heating and Forced Ventilation Appliances for Commercial and Industrial Applications	IFGC		
<u>CSA/ANSI Z21.11.2—2016 :19</u>	Gas-fired Room Heaters— Volume II—Unvented Room Heaters	IFGC	IRC®	
<u>CSA/ANSI Z21.56 :19/CSA 4.7— 17 :19</u>	Gas-fired Pool Heaters	IFGC	ISPSC	IRC®
<u>CSA/ANSI Z21.10.3 :19/CSA 4.3—2017 :19</u>	Gas Water Heaters—Volume III —Storage, Water Heaters with Input Ratings above 75,000 Btu per Hour, Circulating and Instantaneous	IFGC	IECC®	IRC®
<u>CSA/ANSI Z21.15 :22/CSA 9.1— 09(R2014) :22</u>	Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves	IFGC	IRC®	
<u>CSA/ANSI Z21.19 :19/CSA 1.4— 2014 :19</u>	Refrigerators Using Gas Fuel	IFGC		
<u>CSA/ANSI Z21.42—2013 (R2018)</u>	Gas-fired Illuminating Appliances	IFGC	IRC®	
<u>CSA/ANSI Z21.47 :21/CSA 2.3— 16 :21</u>	Gas-fired Central Furnaces	IECC®		
<u>CSA/ANSI Z21.58 :22/CSA 1.6— 2015 :22</u>	Outdoor Cooking Gas Appliances	IFGC	IRC®	
<u>CSA/ANSI Z21.80 :19/CSA 6.22— 11(R2016) :19</u>	Line Pressure Regulators	IFGC	IRC®	

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CSA/ANSI Z21.90:19/CSA 6.24-2015:19	Gas Convenience Outlets and Optional Enclosures	IRC®	
CSA/ANSI Z21.91-2017:20	Ventless Firebox Enclosures for Gas-fired Unvented Decorative Room Heaters	IFGC	IRC®
CSA/ANSI Z21.10.1:19/CSA 4.1-2017:19	Gas Water Heaters—Volume I—Storage, Water Heaters with Input Ratings of 75,000 Btu per Hour or Less	IFGC	IRC®
CSA/ANSI Z21.54:19-2014/CSA 8.4:19	Gas Hose Connectors for Portable Outdoor Gas-fired Appliances	IFGC	IRC®
A108.11-10:18	Interior Installation of Cementitious Backer Units	IRC®	
A108.4-09:19	Installation of Ceramic Tile with Organic Adhesives or Water-cleanable Tile-setting Epoxy Adhesive	IBC	IRC®
A108.5-19:21	Installation of Ceramic Tile with Dry-set Portland Cement Mortar or Latex-Portland Cement Mortar. Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood), Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar	IBC	IRC®
A108.6-19:99(R2019)	Installation of Ceramic Tile with Chemical-resistant, Water Cleanable Tile-setting and -grouting Epoxy	IBC	IRC®
A108.8-19:99(R2019)	Installation of Ceramic Tile with Chemical-resistant Furan Resin Mortar and Grout	IBC	
A108.9-19:99(2019)	Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout	IBC	
A118.10-14(R2019)	Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation	IPC	IRC®

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A118.1— 18 <u>19</u>	American National Standard Specifications for Dry-set Portland Cement Mortar	IBC	IRC®
A118.3— 20 <u>21</u>	American National Standard Specifications for Chemical-resistant, Water-cleanable Tile-setting and -grouting Epoxy and Water Cleanable Tile-setting Epoxy Adhesive	IBC	IRC®
A118.4— 18 <u>19</u>	American National Standard Specifications for Modified Dry-set Cement Mortar	IBC	IRC®
A118.5— 99 (R2021)	American National Standard Specifications for Chemical Resistant Furan Mortar and Grouts for Tile Installation	IBC	
A118.6—19	American National Standard Specifications for <u>Standard</u> Cement Grouts for Tile Installation	IBC	
A136.1— 19 <u>20</u>	American National Standard Specifications for <u>Organic Adhesives for the</u> Installation of Ceramic Tile	IBC	IRC®
A137.1— 19 <u>22</u>	American National Standard Specifications for Ceramic Tile	IBC	IRC®
A137.3— 17 <u>22</u>	American National Standard Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panel/Slabs	IBC	
ANSI E1.21— 2013 <u>2020</u>	Entertainment Technology: Temporary Structures Used for Technical Production of Outdoor Entertainment Events	IFC	
CSA/ANSI NGV 5.1— 2016 :22	Residential Fueling Appliances	IFGC	
CSA/ANSI NGV 5.2— 2017 :22	Vehicle Fueling Appliances (VFA)	IFGC	
CSA/ANSI Z21.88:19/CSA 2.33— 16 :19	Vented Gas Fireplace Heaters	IFGC	IRC®

LC 1/CSA 6.26— 2016 :19	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST)	IFGC		
LC4/CSA 6.32—12	Press-connect Metallic Fittings for Use in Fuel Gas Distribution Systems	IRC®		
Z21.1/CSA 1.1— 2016 2018	Household Cooking Gas Appliances	IFGC	IMC	IRC
Z21.40.2/CGA 2.92—1996 (R2017)	Gas-fired Work Activated Air Conditioning and Heat Pump Appliances (Internal Combustion)	IFGC		
Z21.40.2/CSA 2.92—96 (R2017)	Gas-fired Work Activated Air-conditioning and Heat Pump Appliances (Internal Combustion)	IRC®		
Z21.41(R2019)/CSA 6.9—2014 (R2019)	Quick Disconnect Devices for use with Gas Fuel Appliances	IFGC		
Z21.47/CSA 2.3—2016	Gas-fired Central Furnaces	IFGC	IRC®	
Z21.56/CSA 4.7—2017	Gas-fired Pool Heaters	IFGC		
Z21.56a:19/CSA 4.7— 2017 :19	Gas Fired Pool Heaters	ISPSC		
Z21.88/CSA 2.33— 2016 :19	Vented Gas Fireplace Heaters	IFGC		
Z21.8— 1994 (R2012)-94(R2017)	Installation of Domestic Gas Conversion Burners	IFGC	IMC	IRC
Z83.20— 08 2016	Gas-fired Tubular Low-intensity Infrared Heaters Outdoor Decorative Appliances	IFGC	IRC®	
Z97.1— 2014 2015(R2020)	Safety Glazing Materials Used in Buildings—Safety Performance Specifications and Methods of Test	IBC	IRC®	
APA	APA - Engineered Wood Association			
Standard Reference Number	Title	Referenced in Code(s):		
ANSI/A190.1— 2017 2022	<u>Product Standard for Structural Glued-laminated Timber</u>	IRC®		

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ANSI/APA A190.1— 2017 <u>2022</u>	Product Standard for Structural Glued Laminated Timber	IBC
ANSI/APA PRR 410— 16 <u>2021</u>	Standard for Performance-Rated Engineered Wood Rim Boards	IBC
ANSI/APA PRR 410— 2016 <u>2021</u>	Standard for Performance-rated Engineered Wood Rim Boards	IRC®
ANSI/APA PRS 610.1— 2018 <u>2023</u>	Standard for Performance-Rated Structural Insulated Panels in Wall Applications	IRC®
APA PDS Supplement 1— 12 <u>23</u>	Design and Fabrication of Plywood Curved Panels (revised 2013)	IBC
APA PDS Supplement 2— 12 <u>23</u>	Design and Fabrication of Plywood-lumber Beams (revised 2013)	IBC
APA PDS Supplement 3— 12 <u>23</u>	Design and Fabrication of Plywood Stressed-skin Panels (revised 2013)	IBC
APA PDS Supplement 4— 12 <u>23</u>	Design and Fabrication of Plywood Sandwich Panels (revised 2013)	IBC
APA PDS Supplement 5— 16 <u>23</u>	Design and Fabrication of All-plywood Beams (revised 2013)	IBC
APA T300— 16 <u>23</u>	Glulam Connection Details	IBC
APA X440— 17 <u>23</u>	Product Guide: Glulam	IBC
APA X450— 18 <u>23</u>	Glulam in Residential Construction—Building—Construction Guide	IBC
API	American Petroleum Institute	
Standard Reference Number	Title	Referenced in Code(s):
Publ. RP 2028 3rd Edition—(2002, R2010) <u>(2024)</u>	Flame Arrestors in Piping Systems	IFC
Publ. RP 2009—7th Edition—(2002, R2012) <u>(2022)</u>	Safe Welding and Cutting Practices in Refineries, Gas Plants and Petrochemical Plants	IFC

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Publ 2201 5th <u>6th</u> Edition (2009; R2010) <u>(2023)</u>	Procedures for Welding or Hot Tapping on Equipment in Service	IFC
RP 1604—3rd Edition (1996 R2010) <u>(1996) (4th edition 2021)</u>	Closure of Underground Petroleum Storage Tanks	IFC
RP 1615— (1996) (6th Edition R2020) <u>(2011)</u>	Installation of Underground-petroleum Storage Systems	IFC
RP 2001— 9th <u>10th</u> Edition (2012) <u>(2022)</u>	Fire Protection in Refineries, 8th <u>8th</u> Edition	IFC
RP 2003— 8th <u>9th</u> Edition (2015) <u>(2023)</u>	Protection Against Ignitions Arising out of Static, Lightning and Stray Currents	IFC
RP 2023— 3rd <u>4th</u> Edition (2001; R2006) <u>(2023)</u>	Guide for Safe Storage and Handling of Heated Petroleum-derived Asphalt Products and Crude-oil Residue	IFC
RP 651— 4th <u>5th</u> Edition (2014) <u>(2022)</u>	Cathodic Protection of Aboveground Petroleum Storage Tanks	IFC
RP 752— 3rd <u>4th</u> Edition (2009) <u>(2022)</u>	Management of Hazards Associated with Location of Process Plant Buildings, CMA Managers Guide	IFC
Std 2000— 7th <u>7th</u> Edition (2014) <u>(7th edition R2020) 8th edition (2023)</u>	Venting Atmosphere and Low-pressure Storage Tanks: Nonrefrigerated and Refrigerated	IFC
Std 2015— 8th <u>8th</u> Edition 2001 <u>(2010)</u> <u>(2023)</u>	Requirements for Safe Entry and Clearing of Petroleum Storage Tanks	IFC
Std 2350— 4th <u>5th</u> Edition (2012) <u>(2021)</u>	Overfill Protection for Storage Tanks in Petroleum Facilities	IFC
Std 653 <u>Addendum 3</u> — 5th <u>5th</u> Edition (2010) <u>(2022)</u>	Tank Inspection, Repair, Alteration and Reconstruction	IFC

ASABE American Society of Agricultural and Biological Engineers		
Standard Reference Number	Title	Referenced in Code(s):
EP 484.3 DEC2017 <u>(R2022)</u>	Diaphragm Design of Metal-clad, Wood-frame Rectangular Buildings	IBC

EP 486.3 SEP2017 <u>(R2021)</u>	Shallow-post and Pier Foundation Design	IBC			
EP 559.1 W/Corr. AUG2010 (R2014) <u>(R2019)</u>	Design Requirements and Bending Properties for Mechanically Laminated Wood Assemblies	IBC			
S640— <u>JUL2017 (R2022)</u>	Quantities and Units of Electromagnetic Radiation for Plants (Photosynthetic Organisms)	IECC®			
ASCE/SEI		American Society of Civil Engineers Structural Engineering Institute			
Standard Reference Number	Title	Referenced in Code(s):			
19— 16 <u>22</u>	Structural Applications of Steel Cables for Buildings	IBC			
29— 49 <u>05</u>	Standard Calculation Methods for Structural Fire Protection	IBC			
49— 12 <u>21</u>	Wind Tunnel Testing for Buildings and Other Structures	IBC			
55— 46 <u>22</u>	Tensile Membrane Structures	IBC			
7— 46 <u>22</u>	Minimum Design Loads and Associated Criteria for Buildings and Other Structures	IBC	IRC®		
8— 20 <u>21</u>	Standard Specification for the Design of Cold-formed Stainless Steel Structural Members	IBC			
ASCE/SEI 24— 20 <u>14</u>	Flood Resistant Design and Construction	IFC	IRC	ISPSC	IBC
ASHRAE		ASHRAE			
Standard Reference Number	Title	Referenced in Code(s):			
140— 2014 <u>2020</u>	Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs Method of Test for Evaluating Building Performance Simulation Software	IECC®			

146— 2011 <u>2020</u>	Testing Method of Test for Rating Pool Heaters	IECC®		
15— 2019 <u>2022</u>	Safety Standard for Refrigeration Systems	IMC	IFC	
170— 2017 <u>2021</u>	Ventilation of Health Care Facilities	IMC	IBC	IFC
34— 2019 <u>2022</u>	Designation and Safety Classification of Refrigerants	IMC	IRC®	
55— 2017 <u>2020</u>	Thermal Environmental Conditions for Human Occupancy	IECC®		
62.1— 2019 <u>2022</u>	Ventilation for Acceptable Air Quality	ISPSC		
62.1— 2019 <u>2022</u>	Ventilation for Acceptable Indoor Air Quality	IMC	IEBC	IECC®
90.1— 2016 <u>2022</u>	Energy Standard for Buildings Except Low-rise Residential Buildings	IMC	IECC®	
90.1— 2019 <u>2022</u>	Energy Standard for Buildings Except Low-rise Residential Buildings	IECC®		
90.4— 2016 <u>2022</u>	Energy Standard for Data Centers	IECC®		
ANSI/ASHRAE/ACCA Standard 183— (RA2017) <u>2007 (RA 2020)</u>	Peak Cooling and Heating Load Calculations in Buildings; Except Low-rise Residential Buildings	IECC®		
ASME		American Society of Mechanical Engineers		
Standard Reference Number	Title	Referenced in Code(s):		
A112.1.3—2000 (Reaffirmed 2020 <u>2024</u>)	Air Gap Fittings for Use with Plumbing Fixtures, Appliances and Appurtenances	IRC®		
A112.1.3— 2000 (R2020) <u>2024</u>	Air Gap Fittings for Use with Plumbing Fixtures, Appliances and Appurtenances	IPC		

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A112.14.1—2003 (R2022)	Backwater Valves	IPC	
A112.14.1—2003 (R2017) (2022)	Backwater Valves	IRC®	
A112.14.3— 2021 2023	Grease Interceptors	IPC	
A112.14.4—2001 (R2017) (R2022)	Grease Removal Devices	IPC	
A112.14.6—2010 (R2020) (R2024)	FOG (Fats, Oils and Greases) Disposal Systems	IPC	
A112.18.1— 2020 /CSA B125.1— 2020 2023	Plumbing Supply Fittings	IPC	IRC®
A112.18.2— 2019 2023/CSA B125.2— 19 2023	Plumbing Waste Fittings	IPC	
A112.18.2— 2019 2023 /CSA B125.2— 2019 2023	Plumbing Waste Fittings	IRC®	
A112.18.3M—2002 (R2020) (R2022)	Performance Requirements for Backflow Protection Devices and Systems in Plumbing Fixture Fittings	IRC®	
A112.18.6—2021/CSA B125.6—21	Flexible Water Connectors	IPC	IRC®
A112.19.12— 2019 2024	Wall Mounted and Pedestal Mounted, Adjustable, Elevating, Tilting and Pivoting Lavatory, Sink, and Shampoo Bowl Carrier Systems and Drain Waste Systems	IPC	IRC®
A112.19.14—2013 (R2018 2023)	Six-Liter Water Closets Equipped with Dual Flushing Device	IRC®	
A112.19.14—2013 (R2018) (R2023)	Six-liter Water Closets Equipped with a Dual Flushing Device	IPC	
A112.19.15— 2012 () R201 2012 (R2022)	Bathtub/Whirlpool Bathtubs with Pressure Sealed Doors	IPC	IRC
A112.19.19 2016 (R2021)— 2021	Vitreous China Nonwater Urinals	IPC	
A112.19.1— 2020 2022/CSA B45.2— 20 2022	Enameled Cast Iron and Enameled Steel Plumbing Fixtures	IPC	

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A112.19.1— 2020 <u>2022</u> /CSA B45.2— 2020 <u>2022</u>	Enameled Cast-iron and Enameled Steel Plumbing Fixtures	IRC®	
A112.19.2—/CSA B45.1— 2020 <u>2021</u>	Ceramic Plumbing Fixtures	IPC	
A112.19.2— 2020 <u>2021</u> /CSA B45.1— 2020 <u>2021</u>	Ceramic Plumbing Fixtures	IPC	IRC®
A112.19.3—2021/CSA B45.4— 00 <u>(R2021)</u>	Stainless Steel Plumbing Fixtures	IPC	IRC®
A112.19.5— 2021 <u>2022</u> /CSA B45.15— 2021 <u>2022</u>	Flush Valves and Spuds for Water Closets, Urinals, and Tanks	IPC	IRC®
A112.19.7— 2012 <u>2023</u> /CSA B45.10— 2012 <u>(R2021)</u> <u>2023</u>	Hydromassage Bathtub Systems	IRC®	
A112.19.7—CSA B45.10— R <u>2012</u> / 2012 <u>(2021)</u> <u>2012</u> / <u>(R2023)</u>	Hydromassage Bathtub Systems	IPC	
A112.21.3—1985 <u>(R2017)</u> <u>2022</u>	Hydrants for Utility and Maintenance Use	IPC	
A112.3.4— 2020 <u>2022</u> /CSA B45.9— 20 <u>2022</u>	Macerating Toilet Systems and Related Components	IRC®	
A112.36.2M—1991 <u>(R2017)</u> <u>(R2022)</u>	Cleanouts	IPC	IRC®
A112.4.14— 2004 <u>(R2019)</u> <u>2022</u>	Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems	IPC	IRC®
A112.4.14— 2019 <u>2022</u> /CSA B125.14— 19 <u>2022</u>	Manually Operated Valves for Use in Plumbing Systems	IPC	IRC®
A112.4.1— 2019 <u>2024</u>	Water Heater Relief Valve Drain Tubes	IRC®	
A112.4.2— 2020 <u>2021</u> /CSA B45.16— 20 <u>2021</u>	Water Closet Personal Hygiene Devices	IPC	
A112.4.3— 1999 <u>(R2020)</u> <u>2024</u>	Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System	IPC	IRC®

A112.4.4— 2017 <u>2022</u>	Plastic Push-Fit Drain, Waste, and Vent (DWV) Fittings	IPC		IRC®	
A112.6.1M — 1997(R2017) <u>2022</u>	Floor-Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use	IPC			
A112.6.2— 2017 <u>2022</u>	Framing-Affixed Supports for Off-the-Floor Water Closets with Concealed Tanks	IPC		IRC®	
A112.6.3— 2019 <u>2022</u>	Floor and Trench Drains	IPC		IRC®	
A112.6.4— 2003 (R2012) (R2020)	Roof, Deck, and Balcony Drains	IPC			
A112.6.7—2010(R2020) (<u>R2024</u>)	Sanitary Floor Sinks	IPC			
A112.6.9—2005 (R2020) (<u>R2024</u>)	Siphonic Roof Drains	IPC			
A17.1— 2019 <u>2022</u> /CSA B44— 19 <u>2022</u>	Safety Code for Elevators and Escalators	IBC	IEBC	IFC	IRC®
A17.3— 2020 <u>2023</u>	Safety Code for Existing Elevators and Escalators	IEBC		IFC	
A18.1— 2020 <u>2023</u>	Safety Standard for Platform Lifts and Stairway Chairlifts	IBC	IEBC		IRC®
ASME A17.1— 2019 <u>2022</u> /CSA B44— 19 <u>2022</u>	Safety Code for Elevators and Escalators	IPMC		IECC®	
ASME A17.1— 2019 <u>2022</u> /CSA B44— 2019 <u>2022</u>	Safety Code for Elevators and Escalators	IRC®			
ASSE 1016— 2020 <u>2021</u> /ASME 112.1016— 2020 <u>2021</u> /CSA B125.16— 2020 <u>2021</u>	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	IPC		IRC®	
B1.13M— 2006 <u>2020</u>	Metric Screw Threads: M Profile	IMC			
B1.1— 2009 <u>2024</u>	Unified Inch Screw Threads, UN and UNR Thread Form	IMC			
B1.20.1— 2019 <u>2023</u>	Pipe Threads, General Purpose (inch)	IFGC	IMC	IPC	IRC®

B1.20.3— 1976 <u>2023</u>	Dryseal Pipe Threads, Inch	IMC				
B16.12— 2009 (R2019) <u>2024</u>	Cast Iron Threaded Drainage Fittings	IPC			IRC®	
B16.15— 2013 <u>2023</u>	Cast Alloy Threaded Fittings: Glasses 125 and 250	ISPSC				
B16.15— 2013 <u>2023</u>	Cast Alloy Threaded Fittings: Glasses 125 and 250	IMC	IPC		IRC®	
B16.18— 2018 <u>2023</u>	Cast Copper Alloy Solder Joint Pressure Fittings	IMC	IPC	IBC	IFC	IRC®
B16.22— 2018 <u>2023</u>	Wrought Copper and Copper Alloy Solder Joint Pressure Fittings	IMC	IPC	IBC	IFC	IRC®
B16.26— 2018 <u>2023</u>	Cast Copper Alloy Fittings for Flared Copper Tubes	IMC		IPC		IRC®
B16.29— 2017 <u>2022</u>	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings (DWV)	IPC			IRC®	
B16.33— 2012 (R2017) <u>2022</u>	Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes 1/2 through 2)	IRC®				
B16.33— 2012 (R2017) <u>2022</u>	Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes 1/2 through 2)	IFGC				
B16.34— 2020 <u>2023</u>	Valves—Flanged, Threaded and Welding End	IPC			IRC®	
B16.44— 2012 (R2017) <u>2022</u>	Manually Operated Metallic Gas Valves for Use in Above-ground Piping Systems up to 5 psi	IFGC			IRC®	
B16.47— 2020 <u>2023</u>	Large Diameter Steel Flanges: NPS 26 through NPS 60 Metric/Inch Standard	IFGC				
B16.5— 2019 <u>2024</u>	Pipe Flanges and Flanged Fittings: NPS 1/2 through NFPS 24 Metric/Inch Standard	IFGC			IMC	

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B16.9— 2018 <u>2023</u>	Factory-Made Wrought Steel Buttwelding Fittings	IMC	IPC	IRC®	
B20.1— 2021 <u>2024</u>	Safety Standard for Conveyors and Related Equipment	IBC			
B251/B251M—2017	Specification for General Requirements for Wrought Seamless Copper and Copper-alloy Tube	IPSDC			
B31.12— 2019 <u>2024</u>	Hydrogen Piping and Pipelines	IFGC			
B31.1— 2020 <u>2022</u>	Power Piping	IFC			
B31.3— 2020 <u>2022</u>	Process Piping	IFGC	IBC	IFC	
B31.4— 2019 <u>2022</u>	Pipeline Transportation Systems for Liquids and Slurries	IFC			
B31.5— 2019 <u>2022</u>	Refrigeration Piping and Heat Transfer Components	IMC	IPC		
B31.9— 2020 <u>2023</u>	Building Services Piping	IMC	IFC		
B36.10M— 2018 <u>2023</u>	Welded and Seamless Wrought-steel Pipe	IFGC	IRC®		
BPVC— 2019 <u>2023</u>	ASME Boiler and Pressure Vessel Code (Sections I, II, IV, V & VI, VIII)	IFGC	IMC	IFC	IRC®
CSD-1— 2021 <u>2024</u>	Controls and Safety Devices for Automatically Fired Boilers	IFGC	IMC	IRC®	

ASPE		American Society of Plumbing Engineers		
Standard Reference Number	Title	Referenced in Code(s):		
45— 2013 <u>2018</u>	Siphonic Roof Drainage Systems	IPC		
ASPE/IAPMO Z1034—2015 (<u>R2020</u>)	Test Method for Evaluating Roof Drain Performance	IPC		

ASSE		ASSE International		
Standard Reference Number	Title	Referenced in Code(s):		

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1003— 09 <u>2020</u>	Performance Requirements for Water Pressure Reducing Valves <u>for Domestic Water Distribution</u>	IPC	
1003— 2014 <u>2020</u>	Performance Requirements for Water-pressure-reducing Valves for Domestic Water Distribution Systems	IRC®	
1008— 06 <u>2020</u>	Performance Requirements for Plumbing Aspects of Food Waste Disposer Units	IPC	
1008— 2006 <u>2020</u>	Performance Requirements for Plumbing Aspects of Residential Food Waste Disposer Units	IRC®	
1013— 2017 <u>2021</u>	Performance Requirements for Reduced Pressure Principle Backflow <u>Prevention Assemblies Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers</u>	IRC®	
1015— 2017 <u>2021</u>	Performance Requirements for Double Check Backflow Prevention Assemblies <u>and Double Check Fire Protection Backflow Prevention Assemblies</u>	IPC	IRC®
1018— 2004 <u>2021</u>	Performance Requirements for Trap Seal Primer Valves; Potable Water Supplied	IPC	IRC®
1019— 2014 (R2016)	<u>Performance Requirements for Vacuum Breaker Wall Hydrants, Freeze Resistant, Automatic Draining Type, Performance Requirements for Freeze-resistant, Wall Hydrants, Vacuum Breaker, Draining Types</u>	IPC	IRC®
1020— 04 <u>2020</u>	Performance Requirements for Pressure Vacuum Breaker Assembly	IPC	
1020— 2004 <u>2020</u>	Performance Requirements for Pressure Vacuum Breaker Assembly	IRC®	
1022— 2017 <u>2021</u>	Performance Requirements for Backflow Preventer for Beverage Dispensing Equipment	IPC	

1023— 1979 <u>2020</u>	Performance Requirements for <u>Electrically Heated or Cooled Hot Water Dispensers</u> ; Household storage type—Electrical	IRC®	
1024— 2017 <u>2021</u>	Performance Requirements for Dual Check Valve Type Backflow Preventers, Anti-siphon-type, Residential Applications	IPC	IRC®
1035— 08 <u>2020</u>	Performance Requirements for Laboratory Faucet Backflow Preventers	IPC	
1035— 2008 <u>2020</u>	Performance Requirements for Laboratory Faucet Backflow Preventers	IRC®	
1044— 2015 <u>2020</u>	Performance Requirements for Trap Seal Primer Devices—Drainage Types and Electronic Design Types	IPC	IRC®
1047— 2011 <u>2021</u>	Performance Requirements for Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies	IPC	IRC®
1048— 2011 <u>2021</u>	Performance Requirements for Double Check Detector Fire Protection Backflow Prevention Assemblies	IPC	IRC®
1049— 2009 <u>2021</u>	Performance Requirements for Individual and Branch Type Air Admittance Valves for Chemical Waste Systems	IPC	
1050— 2009 <u>2021</u>	Performance Requirements for Stack Air Admittance Valves for Sanitary Drainage Systems	IPC	IRC®
1051— 2009 <u>2021</u>	Performance Requirements for Individual and Branch Type Air Admittance Valves for Sanitary Drainage Systems fixture and Branch Devices	IPC	IRC®
1056— 2019 <u>2021</u>	Performance Requirements for Spill-Resistant Vacuum Breaker	IPC	IRC®

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1060— 2016 <u>2020</u>	Performance Requirements for Outdoor Enclosures for Fluid-conveying Components	IRC®		
1060— 2017 <u>2020</u>	Performance Requirements for Outdoor Enclosures for Fluid Conveying Components	IPC		
1061— 2015 <u>2020</u>	Performance Requirements for Push Fit Fittings	IMC	IPC	IRC®
1062— 2017 <u>2021</u>	Performance Requirements for Temperature Actuated, Flow Reduction (TAFR) Valves to Individual Supply Fittings	IPC		IRC®
1064— 2006 (R2011) <u>2020</u>	Performance Requirements for Backflow Prevention Assembly Field Test Kits	IPC		
1069— 05 <u>2020</u>	Performance Requirements for Automatic Temperature Control Mixing Valves	IPC		
1071— 2012 <u>2021</u>	Performance Requirements for Temperature Actuated Mixing Valves for Plumbed Emergency Equipment	IPC		
1072— 07 <u>2020</u>	Performance Requirements for Barrier Type Floor Drain Tap Seal Protection Devices	IPC		
1072— 2007 <u>2020</u>	Performance Requirements for Barrier-type <u>Trap Seal Protection</u> for Floor Drains Trap Seal Protection Devices	IRC®		
1079— 2005 <u>2021</u>	Performance Requirements for Dielectric Pipe Unions	IMC	IPC	
1081— 2014 <u>2020</u>	Performance Requirements for Backflow Preventers with Integral Pressure Reducing Boiler Feed Valve and Intermediate Atmospheric Vent Style for Domestic and Light Commercial Water Distribution Systems	IPC		IRC®

5013—2015	Performance Requirements for Testing Reduced Pressure Principle Backflow Prevention Assembly Preventers (RPA) and Reduced Pressure Principle Fire Protection Backflow Preventers (RFP)	IPC
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<u>ASSE/APMO 1055—2018 2020</u>	Performance Requirements for Chemical Dispensing Systems with Integral Backflow Protection	IPC
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ASSP		American Society of Safety Professionals	
Standard Reference Number	Title	Referenced in Code(s):	
<u>ANSI/ASSP Z359.1 -2020</u>	The Fall Protection Code	IFGC	
ANSI/ASSE Z359.1— 2018 2020	The Fall Protection Code	IBC	
ANSI/ASSP Z359.1— 2018 2020	The Fall Protection Code	IMC	IFC

ASTM	ASTM International			
Standard Reference Number	Title	Referenced in Code(s):		
A105/A105M— 48 <u>21</u>	Standard Specification for Carbon Steel Forgings for Piping Applications	IMC		
A106/A106M— 2018 <u>2019a</u>	Specification for Seamless Carbon Steel Pipe for High-temperature Service	IFGC	IMC	IRC®
A126—04(2014 <u>2019</u>)	<u>Standard</u> Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings	IMC	IRC®	
A181/A181M—14(2020)	Standard Specification for Carbon Steel Forgings, for General-purpose Piping	IMC		
A182/A182M— 2018A <u>21</u>	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-temperature Service	ISPSC		

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A193/A193M— 49 <u>20</u>	Standard Specification for Alloy-steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications	IMC			
A234/A234M— 18A <u>19</u>	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service	IMC			
A240/A240M— 47 <u>20a</u>	Standard Specification for Chromium and Chromium- n Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications	IMC	IBC	ISPSC	IRC®
A252— 2010(2010) <u>/A252M-19</u>	Specification for Welded and Seamless Steel Pipe Piles	IBC			
A254— 2010(2010) <u>/A254M-12(2019)</u>	Specification for Copper Brazed Steel Tubing	IFGC	IMC	IRC®	
A268/A268M— 2010(16) <u>20</u>	Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service	IRC®			
A268/A268— 2010(16) <u>20</u>	Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service	IFGC			
A269/A269M-15a <u>2019</u>	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service	IFGC	IMC	IPC	IRC®
A307— 2014E+ <u>21</u>	Specification for Carbon Steel Bolts and Studs, and <u>Threaded Rod</u> 60,000 psi <u>PSI</u> Tensile Strength	IRC®			
A312/A312M— 2010 <u>21</u>	Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	IPC			
A312/A312M— 2010 <u>21</u>	Standard Specification for Seamless, Welded and Heavily Cold Worked Austenitic Stainless Steel Pipes	IFGC		ISPSC	

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A312/A312M— 47 <u>21</u>	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	IMC		
A312/A312M— 2018 <u>21</u>	Specification for Seamless, Welded and Heavily Cold Worked Austenitic Stainless Steel Pipes	IRC®		
A334/A334M—04a(2016 <u>2021</u>)	Standard Specification for Seamless and Welded Carbon and Alloy-steel Tubes for Low-temperature Service	IMC		
A36/A36M— 14 <u>19</u>	Specification for Carbon Structural Steel	IBC	IRC®	
A395/A395M—99(2014) <u>2018</u>	Standard Specification for Ferritic Ductile Iron Pressure-retaining Castings for Use at Elevated Temperatures	IMC		
A403/A403M— 2018A <u>20</u>	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	ISPSC		
A416/A416M— 2017A <u>18</u>	<u>Standard Specification for Low-Relaxation , Uncoated Seven-Wire Steel Strand for Prestressed Concrete</u>	IBC		
A420/A420M— 2016 <u>20</u>	Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-temperature Service	IMC		
A463/A463M—15 (<u>2020</u>) <u>e1</u>	Standard Specification for Steel Sheet, Aluminum-coated, by the Hot-dip Process	IBC	IRC®	
A53/A53M— 2010 <u>2020</u>	Specification for Pipe, Steel, Black and Hot-dipped, Zinc-coated Welded and Seamless	IPC		
A53/A53M— 2010 <u>2020</u>	Specification for Pipe, Steel, Black and Hot Dipped Zinc-coated Welded and Seamless	IFGC	IMC	IRC®
A536—84(2014) (<u>2019</u>) <u>e1</u>	Standard Specification for Ductile Iron Castings	IMC		
A563/A563M— 15 <u>21a</u>	Standard Specification for Carbon and Alloy Steel Nuts	IRC®		

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A572/A572M— 2010 <u>21e1</u>	Specification for High-strength Low-alloy Columbium-Vanadium Structural Steel	IBC	
A588/A588M— 45 <u>19</u>	Standard Specification for High- s Strength Low- a Alloy Structural Steel, with up to 50 ksi <u>[345 MPa]</u> Minimum Yield Point with Atmospheric Corrosion Resistance	IBC	
A6/A6M— 2017A <u>2019</u>	Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes and Sheet Piling	IBC	
A615/A615M— 45ae+ <u>20</u>	Standard Specification for Deformed and Plain Carbon- s Steel Bars for Concrete Reinforcement	IBC	
A615/A615M— 2015ae+ <u>20</u>	Standard Specification for Deformed and Plain Carbon- s Steel Bars for Concrete Reinforcement	IRC®	
A641/A641M— 09a(2014) <u>19</u>	Specification for Zinc-coated (Galvanized) Carbon Steel Wire	IRC®	
A653/A653M— 2017 <u>2020</u>	Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-iron Alloy-coated (Galvannealed) by the Hot-dip Process	IRC®	
A653/A653M— 2017 <u>2020</u>	Specification for Steel Sheet, Zinc-coated Galvanized or Zinc-iron Alloy-coated Galvannealed by the Hot-dip Process	IBC	
A706/A706M—2016	Standard Specification for Deformed and Plain Low- a Alloy Steel Bars for Concrete Reinforcement	IBC	IRC®
A74— 47 <u>2021</u>	Specification for Cast-iron Soil Pipe and Fittings	IPC	
A74—2017	Specification for Cast-iron Soil Pipe and Fittings	IRC®	

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A755/A755M— 2016E+ <u>18</u>	Specification for Steel Sheet, Metallic-coated by the Hot-dip Process and Prepainted by the Coil-coating Process for Exterior Exposed Building Products	IBC	
A755M/ <u>A755M</u> — 2016E+ <u>18</u>	Specification for Steel Sheet, Metallic Coated by the Hot-dip Process and Prepainted by the Coil-coating Process for Exterior Exposed Building Products	IRC®	
A778/A778M— <u>16(2021)</u>	Specification for Welded Unannealed Austenitic Stainless Steel Tubular Products	IPC	
A778M/ <u>A778M</u> — 2016 <u>(2021)</u>	Specification for Welded Unannealed Austenitic Stainless Steel Tubular Products	IRC®	
A792/A792M— 10(2015) <u>21a</u>	Specification for Steel Sheet, 55% Aluminum-zinc Alloy-coated by the Hot-dip Process	IBC	IRC®
A875/A875M— 13 <u>21</u>	Standard Specification for Steel Sheet, Zinc-5%, Aluminum Alloy-coated by the Hot-dip Process	IBC	IRC®
A888— 2010 <u>21a</u>	Specification for Hubless Cast-iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Application	IPC	IRC®
A924/A924M— 2017A <u>20</u>	Standard Specification for General Requirements for Steel Sheet, Metallic-coated by the Hot-dip Process	IBC	
A924M— 2017A <u>20</u>	Standard Specification for General Requirements for Steel Sheet, Metallic-coated by the Hot-dip Process	IRC®	
B101— <u>12(2019)</u>	Specification for Lead-coated Copper Sheet and Strip for Building Construction	IBC	IRC®
B152/B152M— 13 <u>19</u>	<u>Standard</u> Specification for Copper Sheet, Strip, Plate, and Rolled Bar	IPC	
B209— 14 <u>21</u>	Specification for Aluminum and Aluminum Alloy Steel and Plate	IBC	IRC®

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B210/B210M—19a	Standard Specification for Aluminum and Aluminum-alloy Drawn Seamless Tubes	IFGC			IMC			
B280— 18 <u>20</u>	Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	IFGC	IMC	IFC	IRC	IBC		
B306— 19 <u>20</u>	Specification for Copper Drainage Tube (DWV)	IPC			IRC®			
B32— 08(2014) <u>20</u>	Specification for Solder Metal	IMC	IPC		IRC®			
B370—12(<u>2019</u>)	Specification for Copper Sheet and Strip for Building Construction	IBC			IRC®			
B42— 15a <u>20</u>	Specification for Seamless Copper Pipe, Standard Sizes	IMC	IPC	IFC	IRC	IBC		
B43— 15 <u>20</u>	Specification for Seamless Red Brass Pipe, Standard Sizes	IMC	IPC	IBC	IFC	IRC®		
B447—12a(<u>2021</u>)	Specification for Welded Copper Tube	IPC		ISPSC		IRC®		
B68/B68M— 14 <u>19</u>	<u>Standard</u> Specification for Seamless Copper Tube, Bright Annealed (Metric)	IMC		IBC		IFC		
B75/B75M— 14 <u>20</u>	Specification for Seamless Copper Tube	IMC		IPC		IRC®		
B819— 2018 <u>19</u>	Standard Specification for Seamless Copper Tube for Medical Gas Systems	IMC						
B88— 2016 <u>20</u>	Specification for Seamless Copper Water Tube	IFGC	IMC	IPC	IBC	IFC	ISPSC	IRC®
C1002— 2018 <u>20</u>	Specification for Steel Self-piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs	IBC			IRC®			
C1007— 11a(2015) <u>20</u>	Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories	IBC						

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C1029— 15 <u>20</u>	Specification for Spray-applied Rigid Cellular Polyurethane Thermal Insulation	IBC	IRC®	
C1047— 14a <u>19</u>	Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base	IRC®		
C1063— 2010B <u>21</u>	Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-based Plaster	IBC	IRC®	
C1088— 2010 <u>20</u>	Specification for Thin Veneer Brick Units Made from Clay or Shale	IBC	IRC®	
C1107/C1107M— 2017 <u>20</u>	Standard Specification for Packaged Dry, Hydraulic-cement Grout (Nonshrink)	IRC®		
C1157/C1157M— 2017 <u>20a</u>	Standard Performance Specification for Hydraulic Cement	IBC		
C126— 2017 <u>19</u>	Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	IRC®		
C1277— 2010 <u>20</u>	Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	IPC	IPSDC	IRC®
C1280— 13a <u>18</u>	Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing	IBC		
C1283—2015(<u>2021</u>)	Practice for Installing Clay Flue Lining	IBC	IRC®	
C1288—2017	Standard Specification for Discrete Nonasbestos Fiber-cement Interior Substrate Sheets	IBC	IRC®	
C1289— 2010 <u>21</u>	Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board	IBC	IRC®	
C1313/C1313M—13(<u>2019</u>)	Standard Specification for Sheet Radiant Barriers for Building Construction Applications	IBC		

C1325— 2018 <u>21</u>	Standard Specification for Nonasbestos Fiber-mat Reinforced Cement Backer Units	IBC	IRC®		
C1328/C1328M— 12 <u>19</u>	Specification for Plastic (Stucco Cement)	IBC	IRC®		
C1363— 11 <u>19</u>	Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus	IECC®	IRC®		
C1364— 2017 <u>19</u>	Standard Specification for Architectural Cast Stone	IBC	IRC®		
C140/C140M— 2018 <u>21</u>	Test Method Sampling and Testing Concrete Masonry Units and Related Units	IBC			
C1405— 2016 <u>20a</u>	Standard Specification for Glazed Brick (Single Fired, Brick Units)	IRC®			
C143/C143M— 15A <u>20</u>	Test Method for Slump of Hydraulic Cement Concrete	IRC®			
C1440— 2017 <u>21</u>	Specification for Thermoplastic Elastomeric (TPE) Gasket Materials for Drain, Waste, and Vent (DWV), Sewer, Sanitary and Storm Plumbing Systems	IPC	IPSDC	IRC	
C1440— 2017 <u>21</u>	Specification for Thermoplastic Elastomeric (TPE) Gasket Materials for Drain, Waste and Vent (DWV), Sewer, Sanitary and Storm Plumbing Systems	IRC®			
C1460— 2017 <u>21</u>	Specification for Shielded Transition Couplings for Use with Dissimilar DWV Pipe and Fittings Above Ground	IPC	IPSDC	IRC®	
C1460— 2017 <u>21</u>	Specification for Shielded Transition Couplings for Use with Dissimilar DWV Pipe and Fittings Above Ground	IRC®			

C1461— 2008(2017) <u>21</u>	Specification for Mechanical Couplings Using Thermoplastic Elastomeric (TPE) Gaskets for Joining Drain, Waste and Vent (DWV) Sewer, Sanitary and Storm Plumbing Systems for Above and Below Ground Use	IPC	
C14— 15a <u>20</u>	Specification for Nonreinforced Concrete Sewer, Storm Drain and Culvert Pipe	IPC	IRC®
C150/C150M— 2018 <u>21</u>	Specification for Portland Cement	IBC	IRC®
C1540— 2018 <u>20</u>	Specification for Heavy Duty Shielded Couplings Joining Hubless Cast-iron Soil Pipe and Fittings	IPC	
C1563— 2008(2017) <u>(2021)</u>	Standard Test Method for Gaskets for Use in Connection with Hub and Spigot Cast Iron Soil Pipe and Fittings for Sanitary Drain, Waste, Vent and Storm Piping Applications	IPC	
C1568— 08(2013) <u>(2020)</u>	Standard Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Mechanical Uplift Resistance Method)	IBC	
C1600/C1600M— 2017 <u>19</u>	Standard Specification for Rapid Hardening Hydraulic Cement	IBC	
C1629/C1629M— 2018A <u>19</u>	Standard Classification for Abuse-resistant Nondecorated Interior Gypsum Panel Products and Fiber-reinforced Cement Panels	IBC	
C1634— 2017 <u>20</u>	Standard Specification for Concrete Facing Brick <u>and Other Concrete Masonry Facing Units</u>	IRC®	
C1658/C1658M— 2018 <u>19e1</u>	Standard Specification for Glass Mat Gypsum Panels	IBC	IRC®
C1668— 13a <u>20</u>	Standard Specification for Externally Applied Reflective Insulation Systems on Rigid Duct in Heating, Ventilation, and Air Conditioning (HVAC) Systems	IRC®	

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C1670/1670M— 2018 <u>2021a</u>	Standard Specification for Adhered Manufactured Stone Masonry Veneer Units	IRC®			
C1670/C1670M— 2018 <u>21a</u>	Standard Specification for Adhered Manufactured Stone Masonry Veneer Units	IBC			
C1766—2015(<u>2019</u>)	Standard Specification for Factory-laminated Gypsum Panel Products	IBC	IRC®		
C1788— 14 <u>20</u>	Standard Specification for Non Metallic Plaster Bases (Lath) Used with Portland Cement Based Plaster in Vertical Wall Applications	IBC			
C208—2012(2017) E+ <u>e2</u>	Specification for Cellulosic Fiber Insulating Board	IBC	IRC®		
C212— 2017 <u>21</u>	Standard Specification for Structural Clay Facing Tile	IRC®			
C216— 2017A <u>21</u>	Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)	IBC	IRC®		
C22/C22M—00(2015) <u>(2021)</u>	Specification for Gypsum	IBC	IRC®		
C270— 14A <u>19ae1</u>	Specification for Mortar for Unit Masonry	IRC®			
C28/C28M—10(2015) <u>2020</u>	Specification for Gypsum Plasters	IBC	IRC®		
C31/C31M— 2018B <u>21a</u>	Practice for Making and Curing Concrete Test Specimens in the Field	IBC			
C315—2007(2016) <u>(2021)</u>	Specification for Clay Flue Liners and Chimney Pots	IFGC	IMC	IBC	IRC®
C317/C317M—2000 (2015) <u>(2019)</u>	Specification for Gypsum Concrete	IBC			
C34—2017	<u>Standard Specification for Structural Clay Load-bearing Loadbearing Wall Tile</u>	IRC®			

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C35/C35M— (2014) <u>01(2019)</u>	Specification for Inorganic Aggregates for Use in Gypsum Plaster	IRC®		
C35/C35—01 (2014) <u>(2019)</u>	Specification for Inorganic Aggregates for Use in Gypsum Plaster	IBC		
C411— 2017 <u>2019</u>	Test Method for Hot-surface Performance of High-temperature Thermal Insulation	IMC	IRC®	
C425— 2004(2018) <u>21</u>	Specification for Compression Joints for Vitrified Clay Pipe and Fittings	IPC	IPSDC	IRC
C443— 2012(2017) <u>20</u>	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	IPC		
C443— 2012(2017) <u>20</u>	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	IRC®		
C472— 99(2014) <u>20</u>	Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete	IBC		
C473— 2017 <u>2019</u>	Test Methods for Physical Testing of Gypsum Panel Products	IBC		
C474—15 (2020)	Test Methods for Joint Treatment Materials for Gypsum Board Construction	IBC		
C475M—2017	Specification for Joint Compound and Joint Tape for Finishing Gypsum Wallboard	IRC®		
C476— 2018 <u>2020</u>	Specification for Grout for Masonry	IRC®		
C503M/C503M—2015	Standard Specification for Marble Dimension Stone	IRC®		
C514—04 (2014) <u>(2020)</u>	Specification for Nails for the Application of Gypsum Board	IBC	IRC®	
C516— 2008(2014) <u>E+ 19</u>	Specifications for Vermiculite Loose Fill Thermal Insulation	IBC		

C547— 2017 <u>19</u>	Specification for Mineral Fiber Pipe Insulation	IBC	
C549— 06(2012) <u>18</u>	Specification for Perlite Loose Fill Insulation	IBC	
C552— 2017E+ <u>21a</u>	Standard Specification for Cellular Glass Thermal Insulation	IBC	IRC®
C564— 14 <u>20a</u>	Specification for Rubber Gaskets for Cast-iron Soil Pipe and Fittings	IPC	IRC®
C578— 2018 <u>19</u>	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation	IBC	IRC®
C59/C59M— 00(2015) <u>(2020)</u>	Specification for Gypsum Casting Plaster and Molding Plaster	IBC	IRC®
C595/C595M— 2018 <u>21</u>	Specification for Blended Hydraulic Cements	IBC	IRC®
C61/C61M— 00(2015) <u>(2020)</u>	Specification for Gypsum Keene's Cement	IBC	IRC®
C631— 09(2014) <u>2020</u>	Specification for Bonding Compounds for Interior Gypsum Plastering	IBC	IRC®
C636/C636M— 13 <u>19</u>	Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels	IBC	
C652— 2017A <u>21</u>	Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)	IBC	IRC®
C67/C67M— 2018 <u>21</u>	Test Methods of Sampling and Testing Brick and Structural Clay Tile	IBC	
C754— 2018 <u>20</u>	Specification for Installation of Steel Framing Members to Receive Screw-attached Gypsum Panel Products	IBC	
C76— 2018A <u>20</u>	Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe	IPC	

C76— 2018A <u>20</u>	Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe	IPC	IPSDC	IRC®
C840— 2018A <u>20</u>	Specification for Application and Finishing of Gypsum Board	IBC		
C842— 05(2015) <u>(2021)</u>	Specification for Application of Interior Gypsum Plaster	IBC	IRC®	
C844—2015 <u>(2021)</u>	Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster	IBC	IRC®	
C847— 14a <u>2018</u>	Specification for Metal Lath	IBC		
C887— 19 <u>20</u>	Specification for Packaged, Dry Combined Materials for Surface Bonding Mortar	IBC	IRC®	
C897—15 <u>(2020)</u>	Specification for Aggregate for Job-mixed Portland Cement-based Plaster	IBC	IRC®	
C926— 2018B <u>20b</u>	Specification for Application of Portland Cement-based Plaster	IBC	IRC®	
C932— 06(2013) <u>(2019)</u>	Specification for Surface-applied Bonding Compounds for Exterior Plastering	IBC		
C94/C94M— 17A <u>21b</u>	Specification for Ready-mixed Concrete	IEBC		
C94/C94M— 2017A <u>21b</u>	Specification for Ready-mixed Concrete	IBC	IRC®	
C956— 04(2015) <u>(2019)</u>	Specification for Installation of Cast-in-place Reinforced Gypsum Concrete	IBC		
D1003— 19 <u>21</u>	Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics	IECC®		
D1143/D1143M— 2007(2013)E+ <u>20</u>	<u>Standard Test Methods for Deep Foundations Elements Under Static Axial Compressive Load</u>	IBC		

D1227—13(2019)e1	Specification for Emulsified Asphalt Used as a Protective Coating for Roofing	IBC	IRC®	
D1557—12e+ (2021)	Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lb/ft³ (2,700 kN m/m³)]	IBC		
D1593—49 19	Standard Specification for Nonrigid Vinyl Chloride Plastic Film and Sheeting	ISPSC		
D1693—15e1	Test Method for Environmental Stress-cracking of Ethylene Plastics	IMC	IRC®	
D1784—11 20	Standard Specification <u>Classification System and Basis</u> for Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds	IRC®		
D1785—2015E+ 21a	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120	IPC		
D1785—15E1	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120	IMC	ISPSC	IRC®
D1929—46 20	Standard Test Method for Determining Ignition Temperature of Plastics	IBC		
D1970/D1970M—2017A 21	Specification for Self-adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roof Underlayment for Ice Dam Protection	IBC	IRC®	
D2178/D2178M—15A(2021)	Specification for Asphalt Glass Felt Used in Roofing and Waterproofing	IBC	IRC®	
D2239—12A 21	Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter	IRC®		

D2241— 15 <u>20</u>	Specification for Poly (Vinyl Chloride) (PVC) Pressure-rated Pipe (SDR-Series)	IMC	IPC	ISPSC	IRC®
D2412— 11(2010) <u>21</u>	Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-plate Loading	IMC			
D2466— 2017 <u>21</u>	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	IMC	IPC	ISPSC	IRC
D2466— 2017 <u>21</u>	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	IMC	ISPSC		IRC®
D2467— 15 <u>20</u>	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	IMC	IPC	ISPSC	IRC®
D2487— 2017 <u>17e1</u>	Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)	IBC			
D2513— 2018A <u>20</u>	Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing and Fittings	IFGC		IRC®	
D2564— 2012(2010) <u>20</u>	Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems	IMC	IPC	IRC	
D2609— 15 <u>21</u>	Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe	IPC		IRC®	
D2626/D2626M— 04 (2012)e1 (2020)	Specification for Asphalt-saturated and Coated Organic Felt Base Sheet Used in Roofing	IBC		IRC®	
D2665— 2014 <u>20</u>	Specification for Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	IPC			
D2672— 14 <u>20e1</u>	Specification for Joints for IPS PVC Pipe Using Solvent Cement	IPC	ISPSC		IRC®
D2680— 01(2014) <u>20</u>	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping	IPC		IRC®	

D2683— 14 <u>20</u>	Specification for Socket-type Polyethylene Fittings for Outside Diameter-controlled Polyethylene Pipe and Tubing	IMC	IPC	IRC®
D2737— 12a <u>21</u>	Standard Specification for Polyethylene (PE) Plastic Tubing	IMC	IPC	IBC
D2822/D2822M—2005(2011) <u>e1</u>	Specification for Asphalt Roof Cement, Asbestos Containing	IBC		IRC®
D2843— 46 <u>19</u>	Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics	IBC		
D2846/D2846M— 2017BE <u>19a</u>	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems	IPC		
D2846/D2846M—2017BE1	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-water Distribution Systems	IMC	ISPSC	IRC®
D2855— 2015 <u>2020</u>	<u>Standard Practice for Making Solvent-cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings. Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets.</u>	IPC		
D2859—2016	Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials	IBC		
D2859— 46 <u>2016(2021)</u>	Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials	IFC		
D2949— 40 <u>18</u>	Specification for 3.25-in. Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	IPC		IRC®
D3035— 45 <u>21</u>	Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter	IMC	IPC	IRC®

D312/D312M—2016M_a	Specification for Asphalt Used in Roofing	IBC	IRC®	
D3138—04(2011)	Standard Specification for Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Non-Pressure Piping Components	IRC®		
D3139— 98(2011) <u>19</u>	Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	IPC		
D3161/D3161M— 2016A <u>20</u>	Test Method for Wind Resistance of Steep Slope Roofing Products (Fan Induced Method)	IBC	IRC®	
D3201/D3201M— 13 <u>20</u>	Test Method for Hygroscopic Properties of Fire-retardant-treated Wood and Wood-based Products	IBC	IRC®	
D3212— 07(2013) <u>20</u>	Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals	IPC	IRC®	
D323— 15A <u>20a</u>	Test Method for Vapor Pressure of Petroleum Products (Reid Method)	IFC		
D3278— 96(2011) <u>21</u>	Test Methods for Flash Point of Liquids by Small Scale Closed-cup Apparatus	IMC	IBC	IFC
D3350— 14 <u>21</u>	Specification for Polyethylene Plastic Pipe and Fitting Materials	IRC®		
D3462/D3462M—2016	Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules	IBC		
D3462/D3462M— 16A <u>19</u>	Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules	IRC®		
D3468/D3468M—99(2013)E+ (2020)	Specification for Liquid-applied Neoprene and Chlorosulfonated Polyethylene Used in Roofing and Waterproofing	IBC	IRC®	

D3498—03(2011) <u>19a</u>	Standard Specification for Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems <u>Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing</u>	IBC	
D3679—2017 <u>21</u>	Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding	IBC	IRC®
D3957—2009(2015) <u>(2020)</u>	Standard Practices for Establishing Stress Grades for Structural Members Used in Log Buildings	IBC	
D4434/D4434M—2015 <u>21</u>	Specification for Poly (Vinyl Chloride) Sheet Roofing	IBC	IRC®
D449/D449M—03(2014)E+ <u>2003(2021)</u>	Specification for Asphalt Used in Dampproofing and Waterproofing	IRC®	
D4601/D4601M—04(2012)e+ <u>(2020)</u>	Specification for Asphalt-coated Glass Fiber Base Sheet Used in Roofing	IBC	IRC®
D4829—11 <u>21</u>	Test Method for Expansion Index of Soils	IBC	IRC®
D4869/D4869M—2016A(2021)	Specification for Asphalt-saturated (Organic Felt) Underlayment Used in Steep Slope Roofing	IBC	IRC®
D4990—1997a(2013) <u>(2020)</u>	Specification for Coal Tar Glass Felt Used in Roofing and Waterproofing	IRC®	
D4990—97a(2013)	Specification for Coal Tar Glass Felt Used in Roofing and Waterproofing	IBC	
D5055—2016 <u>2019e1</u>	Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-joists	IBC	IRC®
D5456—2016 <u>21e1</u>	Specification for Evaluation of Structural Composite Lumber Products	IBC	IRC®

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D56—2016A	Test Method for Flash Point by Tag Closed Cup Tester	IMC	IBC
D56— 16a <u>21</u>	Test Method for Flash Point by Tag Closed Cup Tester	IFC	
D5726—98(2013) <u>(2020)</u>	Specification for Thermoplastic Fabrics Used in Hot-applied Roofing and Waterproofing	IBC	IRC®
D6083/D6083M— 2018 <u>21</u>	Specification for Liquid Applied Acrylic Coating Used in Roofing	IBC	IRC®
D6305— 08(2015) <u>E+ 21</u>	Practice for Calculating Bending Strength Design Adjustment Factors for Fire-retardant-treated Plywood Roof Sheathing	IRC®	
D635— 14 <u>18</u>	Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position	IBC	
D6841— 2016 <u>21</u>	Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-retardant Treated Lumber	IBC	IRC®
D6878/D6878M— 2017 <u>19</u>	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing	IBC	IRC®
D7147— 2011(2018) <u>21</u>	Specification for Testing and Establishing Allowable Loads of Joist Hangers	IBC	
D7158/D7158M— 2019 <u>20</u>	Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method)	IBC	IRC®
D7254— 2017 <u>20</u>	Standard Specification for Polypropylene (PP) Siding	IBC	IRC®
D7425/D7425M—13(2019)	Standard Specification for Spray Polyurethane Foam Used for Roofing Applications	IBC	IRC®
D7672— 14E+ <u>19</u>	Standard Specification for Evaluating Structural Capacities of Rim Board Products and Assemblies	IBC	IRC®

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D86— 2017 <u>20b</u>	Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure	IBC				
D93— 18 <u>20</u>	Test Method for Flash Point by Pensky-Martens Closed Cup Tester	IMC		IFC		
D93— 2018 <u>20</u>	Test Methods for Flash Point by Pensky-Martens Closed Cup Tester	IMC	IBC	IFC		
E1007— 16 <u>21</u>	Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures	IBC				
E108— 17 <u>20a</u>	Standard Test Methods for Fire Tests of Roof Coverings	IWUIC	IEBC	IFC	IRC	
E108— 2017 <u>20a</u>	Standard Test Methods for Fire Tests of Roof Coverings	IWUIC	IBC	IRC®		
E119— 2018B <u>20</u>	Standard Test Methods for Fire Tests of Building Construction and Materials	IMC	IWUIC	IBC	IRC®	
E119— 2018B <u>20</u>	Standard Test Methods for Fire Tests of Building Construction and Materials	IWUIC				
E136—2019a	Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	IFGC	IMC	IWUIC	IBC	IRC®
E136— 16A <u>19a</u>	Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C	IEBC				
E1677— 11 <u>19</u>	Specification for Air Barrier (AB) Material or Systems for Low-rise Framed Building Walls	IECC®				
E1886— 2013A <u>19</u>	Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials	IBC		IRC®		

E1918— 06(2016) <u>21</u>	Standard Test Method for Measuring Solar Reflectance of Horizontal or Low-sloped Surfaces in the Field	IECC®		
E1966—15(<u>2019</u>)	Standard Test Method for Fire-resistant Joint Systems	IFC	IBC	
E1980—11(<u>2019</u>)	Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-sloped Opaque Surfaces	IECC®		
E1996— 2017 <u>20</u>	Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes	IBC	IRC®	
E2174— 2018 <u>20a</u>	Standard Practice for On-site Inspection of Installed Fire Stops	IBC		
E2178— 43 <u>21a</u>	Standard Test Method for Air Permeance of Building Materials for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials	IBC	IRC	IECC®
E2178— 2018 <u>21a</u>	Standard Test Method for <u>Determining Air Leakage Rate and Calculation of Air</u> Permanence of Building Materials	IECC®		IRC®
E2231— 2018 <u>19</u>	Standard Practice for Specimen Preparation and Mounting of Pipe and Duct Insulation Materials to Assess Surface Burning Characteristics	IMC	IRC®	
E2307— 45BE+ <u>20</u>	Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using the Intermediate-scale, Multistory Test Apparatus	IBC		
E2336— 46 <u>20</u>	Standard Test Methods for Fire Resistive Grease Duct Enclosure Systems	IMC		
E2353— 2016 <u>21</u>	Standard Test Methods for Performance of Glazing in Permanent Railing Systems, Guards and Balustrades	IBC		

E2393— 10a(2015) <u>20a</u>	Standard Practice for On-site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers	IBC	
E2570/E2570M— 07(2014) E+ <u>(2019)</u>	Standard Test Methods for Evaluating Water-resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage	IRC®	
E2573— 47 <u>19</u>	Standard Practice for Specimen Preparation and Mounting of Site-fabricated Stretch Systems to Assess Surface Burning Characteristics	IFC	
E2579— 45 <u>21</u>	Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning Characteristics	IFC	IBC
E2652— 46 <u>18</u>	Standard Test Method for Behavior Assessing <u>Combustibility</u> of Materials <u>Using</u> in a Tube Furnace with a Cone-shaped Airflow Stabilizer at 750°C	IBC	
E283/E283M— 04(2012) <u>19</u>	Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences across the Specimen	IBC	
E2925— 47 <u>19a</u>	Standard Specification for Manufactured Polymeric Drainage and Ventilation Materials Used to Provide a Rainscreen Function	IBC	IRC®
E3082— 47 <u>20</u>	Standard Test Methods for Determining the Effectiveness of Fire-retardant Treatments for Natural Christmas Trees	IFC	

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E336— 17a <u>20</u>	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings	IBC	
E408—13(2019)	Test Methods for Total Normal Emittance of Surfaces Using Inspection-meter Techniques	IECC®	
E605/E605M— 99(2015) <u>e+ 19</u>	Test Method for Thickness and Density of Sprayed Fire-resistive Material (SFRM) Applied to Structural Members	IBC	
E648— 17a <u>19ae1</u>	Standard Test Method for Critical Radiant Flux of Floor-covering Systems Using a Radiant Heat Energy Source	IFC	
E736/E736M— 2017 <u>19</u>	Test Method for Cohesion/Adhesion of Sprayed Fire-resistive Materials Applied to Structural Members	IBC	
E779—2010(2018)	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	IECC®	IRC®
E779— 10(2018) <u>19</u>	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	IECC®	
E84— 18b <u>21a</u>	Standard Test Method for Surface Burning Characteristics of Building Materials	IFC	
E903— 2012 <u>20</u>	Standard Test Method Solar Absorptance, Reflectance and Transmittance of Materials Using Integrating Spheres (Withdrawn 2005)	IECC®	
E96/E96M—2016	Standard Test Methods for Water Vapor Transmission of Materials	IBC	IRC®
F1085— 14 <u>19</u>	Standard Specification for Mattress and Box Springs for Use in Berths in Marine Vessels	IFC	
F1361— 2017 <u>21</u>	Standard Test Method for Performance of Open Deep Fat <u>Vegetable</u> Fryers	IECC®	

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F1476— 07(2013) <u>(2019)</u>	Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications	IMC	IPC
F1488— 14E+ <u>14(2019)</u>	Specification for Coextruded Composite Pipe	IRC®	
F1495— 2014a <u>20</u>	Standard Specification for Combination Oven Electric or Gas Fired	IECC®	
F1496— 2013 <u>13(2019)</u>	Standard Test Method for Performance of Convection Ovens	IECC®	
F1504— 2014 <u>21</u>	Standard Specification for Folded Poly (Vinyl Chloride) (PVC) for Existing Sewer and Conduit Rehabilitation	IRC®	
F1554— 2018 <u>20</u>	Specification for Anchor Bolts, Steel, 36, 55 and 105-ksi Yield Strength	IRC®	
F1667— 2018 <u>21</u>	Specification for Driven Fasteners: Nails, Spikes and Staples	IBC	IRC®
F1696— 2018 <u>20</u>	Standard Test Method for Energy Performance of Stationary-Rack, Door-Type Commercial Dishwashing Machines	IECC®	
F1807— 2018 <u>19b</u>	Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring, <u>or Alternate Stainless Steel Clamps,</u> for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	IPC	
F1871— 2011 <u>20</u>	Standard Specification for Folded/Formed Poly (Vinyl Chloride) Pipe Type A for Existing Sewer and Conduit Rehabilitation	IRC®	
F1920— 2015 <u>20</u>	Standard Test Method for Performance of Rack Conveyor Commercial Dishwashing Machines	IECC®	

F1924— 42 <u>19</u>	Standard Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing	IMC	IRC®		
F1960— 2018 <u>21</u>	<u>Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing</u>	IPC			
F1970— 2018 <u>19</u>	Special Engineered Fittings, Appurtenances or Valves for Use in Poly (Vinyl Chloride) (PVC) OR Chlorinated Poly (Vinyl Chloride) (CPVC) Systems	IPC			
F1974— 09(2015) <u>(2020)</u>	Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene Composite Pressure Pipe	IPC	IRC®		
F2006— 17 <u>21</u>	Standard/Safety Specification for Window Fall Prevention Devices for Nonemergency Escape (Egress) and Rescue (Ingress) Windows	IBC	IEBC	IFC	
F2080— 2016 <u>2019</u>	Specifications for Cold-expansion Fittings with Metal Compression-sleeves for Cross-linked Polyethylene (PEX) Pipe <u>Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Crosslinked Polyethylene (PEX) Pipe and SDR9 Polyethylene of Raised Temperature (PE-RT) Pipe</u>	IMC	IPC	IRC	
F2090— 17 <u>21</u>	Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms	IBC	IEBC	IFC	IRC®
F2098— 2015 <u>2018</u>	Standard Specification for Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing <u>and SDR9 Polyethylene of Raised Temperature (PE-RT) to Metal Insert and Plastic Fittings</u>	IPC			

F2098— 2015 <u>2018</u>	Standard Specification for Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing and <u>SDR9 Polyethylene of Raised Temperature (PE-RT)</u> to Metal Insert and Plastic Insert Fittings	IMC	IRC®	
F2144— 2017 <u>21</u>	Standard Test Method for Performance of Large Open Vat Fryers	IECC®		
F2159— 2018 <u>21</u>	<u>Standard</u> Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring, <u>or Alternate Stainless Steel Clamps</u> , for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	IPC		
F2159— 2018 <u>21</u>	Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring or <u>Alternate Stainless Steel Clamps</u> for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	IMC	IRC®	
F2200— 17 <u>20</u>	Standard Specification for Automated Vehicular Gate Construction	IFC		
F2306/F2306M— 2018 <u>20</u>	12" to 60" Annular Corrugated Profile-wall Polyethylene (PE) Pipe and Fittings for Gravity Flow Storm Sewer and Subsurface Drainage Applications	IPC		
F2389— 2017A <u>21</u>	<u>Standard</u> Specification for Pressure-rated Polypropylene (PP) Piping Systems	IPC		
F2389—2017A	Specification for Pressure-rated Polypropylene Piping Systems	IMC	IRC®	
F2434— 14 <u>19</u>	Standard Specification for Metal <u>Plastic</u> Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Tubing	IMC	IPC	IRC®

F2561— 47 <u>20</u>	Standard Practice for Rehabilitation of a Sewer Service Lateral and its Connection to the Main Using a One Piece Main and Lateral Cured-in-Place Liner	IPC		
F2599— 46 <u>20</u>	Standard Practice for The Sectional Repair of Damaged Pipe by Means of an Inverted Cured-in-Place Liner	IPC		
F2623— 44 <u>19</u>	Standard Specification for Polyethylene of Raised Temperature (PE-RT) <u>Systems for Non-Potable Water Applications SDR9 Tubing</u>	IMC	IRC®	
F2648/F2648M— 2017 <u>20</u>	Standard Specification for 2 to 60 inch [50 to 1500 mm] Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications	IPC		
F2735— 2009 (2016) <u>21</u>	Standard Specification for Plastic Insert Fittings for SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	IPC		
F2764/F2764M— 2010 <u>19</u>	Standard Specification for 30 to 60 in. [750 to 1500 mm] Polypropylene (PP) Triple Wall Pipe and Fittings for Non-pressure Sanitary Sewer Applications. Standard Specification for 6 to 60 in. [150 to 1500 mm] Polypropylene (PP) Corrugated Double and Triple Wall Pipe and Fittings for Non-Pressure Sanitary Sewer Applications	IPC		
F2769— 2018	<u>Standard Specification for Polyethylene of Raised Temperature (PE-RT) Plastic Hot- and Cold-water Tubing and Distribution Systems</u>	IMC	IPC	IRC
F2806— 40 (2015) <u>20</u>	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe (Metric SDR-PR)	IMC	IRC®	

F2831— 2012 (2017) <u>19</u>	Standard Practice for Internal Non Structural Epoxy Barrier Coating Material Used in Rehabilitation of Metallic Pressurized Piping Systems	IPC			
F2855— 12 <u>19</u>	Standard Specification for Chlorinated Poly(Vinyl Chloride)/Aluminum/Chlorinated Poly(Vinyl Chloride) (CPVC-AL-CPVC) Composite Pressure Tubing	IMC	IPC	IRC®	
F2861— 2017 <u>20</u>	Standard Test Method for Enhanced Performance of Combination Oven in Various Modes	IECC®			
F2881 /F2881M— 2018 <u>21</u>	Standard Specification for 12 to 60 in. [300 to 1500 mm] Polypropylene (PP) Dual Wall Pipe and Fittings for Non-pressure Storm Sewer Applications	IPC			
F2969—12(2020)	Standard Specification for Acrylonitrile-butadiene-styrene (ABS) IPS Dimensioned Pressure Pipe	IRC®			
F3226/F3226M— 16 <u>19</u>	Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems	IPC	IRC®		
F3240— 17 <u>19e1</u>	Standard Practice for Installation of Seamless Molded Hydrophilic Gaskets (SMHG) for Long Term Watertightness of Cured-in-Place Rehabilitation of Main and Lateral Pipelines	IPC			
F3253— 2017 <u>19</u>	Standard Specification for Crosslinked Polyethylene (PEX) Tubing with Oxygen Barrier for Hot- and Cold-water Hydronic Distribution Systems	IMC	IRC®		
F437— 15 <u>21</u>	Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	IMC	IPC	ISPSC	IRC®

F439— 13 <u>19</u>	Specification for Socket Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	IMC	IPC	ISPSC	IRC®
F441/F441M— 15 <u>20</u>	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	IMC	IPC	IRC®	
F442/F442M— 13E+ <u>20</u>	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)	IRC®			
F477— 14 (<u>2021</u>)	Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe	IPC		IRC®	
F493— 14 <u>20</u>	Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings	IMC	IPC	IRC®	
F656— 2015 <u>21</u>	Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	IPC			
F667 /F667M — 2016 (<u>2021</u>)	Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings	IPC			
F714— 19 <u>21a</u>	Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter	IMC		IRC®	
F844— 07a(2013) <u>19</u>	Standard Specification for Washers, Steel, Plain (Flat), Unhardened for General Use	IRC®			
F876— 2017 <u>20b</u>	Specification for Cross-linked Polyethylene (PEX) Tubing	IPC			
F876—2018A	Specification for Cross-linked Polyethylene (PEX) Tubing	IMC			
F877— 2018A <u>20</u>	Specification for Cross-linked Polyethylene (PEX) Hot- and Cold-water Distribution Systems	IPC			

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G152—13(2021)	Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials	IBC	
G154—2016A	<u>Standard Practice for Operating Fluorescent Ultraviolet (UV) Light Lamp Apparatus for UV-Exposure of Nonmetallic Materials</u>	IBC	
G155—13_21	<u>Standard Practice for Operating Xenon Arc Light Lamp Apparatus for Exposure of Nonmetallic Materials</u>	IBC	
AWC		American Wood Council	
Standard Reference Number	Title	Referenced in Code(s):	
ANSI/AWC NDS—2018_2024	National Design Specification (NDS) for Wood Construction— with 2018 NDS Supplement	IBC	IRC®
ANSI/AWC WFCM—2018_2024	Wood Frame Construction Manual for One- and Two-Family Dwellings	IBC	IRC®
AWC STJR—2021_2024	Span Tables for Joists and Rafters	IBC	IRC®
AWPA		American Wood Protection Association	
Standard Reference Number	Title	Referenced in Code(s):	
M4—15_21	<u>Standard for the Handling, Storage, Field Fabrication, and Field Treatment of Care of Preservative-treated Wood Products</u>	IBC	IRC®
U1—20_23	USE CATEGORY SYSTEM: User Specification for Treated Wood Except Commodity Specification H	IBC	IRC®
AWS		American Welding Society	
Standard Reference Number	Title	Referenced in Code(s):	
A5.8/A5.8—2011 AMD+ :2019	Specifications for Filler Metals for Brazing and Braze Welding	IMC	

A5.8M/A5.8—2011—AMD+ :2019	Specifications for Filler Metals for Brazing and Braze Welding	IPC		
A5.8M/A5.8—2011—AMD+ :2019	Specifications for Filler Metals for Brazing and Braze Welding	IRC®		
D1.4/D1.4M—2018—AMD1	Structural Welding Code—Steel Reinforcing Bars	IBC		
AWWA				
American Water Work Association				
Standard Reference Number		Title		Referenced in Code(s):
C110/A21.10—42 <u>21</u>	Standard for Ductile Iron & Gray Iron Fittings	IMC	IPC	IRC®
C115/A21.15—44 <u>20</u>	Standard for Flanged Ductile-iron Pipe with Ductile Iron or Grey-iron Threaded Flanges	IMC	IPC	IRC®
C153/A21.53—44 <u>19</u>	Ductile-iron Compact Fittings for Water Service	IMC	IRC®	
C500—09 <u>19</u>	Standard for Metal-seated Gate Valves for Water Supply Service	IPC	IRC®	
C507—45 <u>18</u>	Standard for Ball Valves, 6 In. Through 60 in. (150 mm through 1,500 mm).	IPC	IRC®	
C510—07 <u>17</u>	Double Check Valve Backflow Prevention Assembly	IRC®		
C652—44 <u>19</u>	Disinfection of Water-storage Facilities	IPC		
C901—46 <u>20</u>	Polyethylene (PE) Pressure Pipe and Tubing, 3/4 in. (19 mm) through 3 in. (76 mm) for Water Service	IMC	IPC	IRC®
C903—46 <u>21</u>	Polyethylene-aluminum-polyethylene (PE-AL-PE) Composite Pressure Pipe, 12 mm (1/2 in.) through 50 mm (2 in.), for Water Service	IRC®		
CGA				
Compressed Gas Association				
Standard Reference Number		Title		Referenced in Code(s):

ANSI/CGA P-18— (2013) <u>(2018)</u>	Standard for Bulk Inert Gas Systems	IFC		
C-7— (2014) <u>(2020)</u>	Guide to Classification and Labeling of Compressed Gases	IFC		
S-1.1— (2011) <u>(2019)</u>	Pressure Relief Device Standards—Part 1—Cylinders for Compressed Gases	IFGC	IFC	
S-1.2— (2009) <u>2019</u>	Pressure Relief Device Standards—Part 2—Cargo and Portable Tanks for Compressed Gases	IFGC	IFC	
S-1.3— (2009) <u>(2020)</u>	Pressure Relief Device Standards—Part 3—Stationary Storage Containers for Compressed Gases	IFGC	IFC	
V-1— (2013) <u>(2021)</u>	Standard for Gas Cylinder Valve Outlet and Inlet Connections	IFC		
CISPI		Cast Iron Soil Pipe Institute		
Standard Reference Number	Title	Referenced in Code(s):		
301— 18 <u>21</u>	<u>Standard Specification for Hubless Cast-iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications</u>	IPC	IPSDC	IRC®
310— 18 <u>20</u>	<u>Standard Specification for Coupling for Use in Connection with Hubless Cast-iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications</u>	IPC	IPSDC	IRC®
CPA		Composite Panel Association		
Standard Reference Number	Title	Referenced in Code(s):		
ANSI A135.4—2012 <u>(R2020)</u>	Basic Hardboard	IBC	IRC®	
ANSI A135.5—2012 <u>(R2020)</u>	Prefinished Hardboard Paneling	IBC	IRC®	
ANSI A135.6— 2012 <u>(R2020)</u>	Engineered Wood Siding	IBC	IRC®	

ANSI A135.7—2012 (R2020)	Engineered Wood Trim	IRC®		
CRRC		Cool Roof Rating Council		
Standard Reference Number	Title	Referenced in Code(s):		
ANSI/CRRC-S100—2020, 2021	Standard Test Methods for Determining Radiative Properties of Materials	IECC®		
CSA		Canadian Standards Association		
Standard Reference Number	Title	Referenced in Code(s):		
ANSI/CSA FC 1—2014 CSA/ANSI FC 1:21/CSA C22.2 NO. 62282-2-100:21	Fuel Cell Technologies—Part 3-100; Stationary fuel cell power systems—Safety	IFGC	IMC	IRC®
ANSI/CSA FC 1—2014 CSA/ANSI FC 1:21/CSA C22.2 NO. 62282-3-100:21	Fuel Cell Technologies—Part 3-100; Stationary fuel cell power systems-Safety	IFGC	IMC	
ANSI/CSA CSA/ANSI NGV 5.1—2016, 22	Residential Fueling Appliances	IFGC		
CSA/CSA/C22.2 No. 60335-2-40—2012, 19	Safety of Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers	IMC	ISPSC	IRC®
A257.1—14, 19	Non-reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	IPC		
A257.2—14, 19	Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe and Fittings	IPC	IPSDC	IRC®
A257.3—14, 19	Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections and Fittings Using Rubber Gaskets	IPC	IPSDC	IRC®
AAMA/WDMA/CSA 101/I.S.2/A440—17, 22	North American Fenestration Standard/Specifications for Windows, Doors and Unit Skylights	IBC	IECC®	IRC®
ANSI Z21.69-2015 (R2020)/CSA 6.16—2015 (R2020)	Connectors for Movable Gas Appliances	IFC	IRC	

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ANSI Z83.26/CSA 2.37—2014	Gas-fired Outdoor Infrared Patio Heaters	IFC	
ANSI/CSA/IGSHPA C448 Series—16 (R2021)	Design and Installation of Ground Source Heat Pump Systems for Commercial and Residential Buildings	IMC	IRC®
ASME A112.18.1— 2018 <u>2022/CSA B125.1—18 :22</u>	Plumbing Supply Fittings	IPC	
ASME A112.18.1— 2018 <u>2023/CSA B125.1—2018 :23</u>	Plumbing Supply Fittings	IRC®	
ASME A112.18.2—2019/CSA B125.2— 2019 <u>2023</u>	Plumbing Waste Fittings	IRC®	
ASME A112.18.2— 2015 <u>2023/CSA B125.2—2015 :2023</u>	Plumbing Waste Fittings	IPC	
ASME A112.18.6— 2017 /CSA B125.6— <u>17(R2022)</u>	Flexible Water Connectors	IPC	
ASME A112.19.1— 2018 <u>2023/CSA B45.2—18 :23</u>	Enameled Cast-iron and Enameled Steel Plumbing Fixtures	IRC®	
ASME A112.19.1— 2020 <u>2023/CSA B45.2—20 :23</u>	Enameled Cast-iron and Enameled Steel Plumbing Fixtures	IPC	
ASME A112.19.2— 2018 <u>2023/CSA B45.1—18 :23</u>	Ceramic Plumbing Fixtures	IRC®	
ASME A112.19.2— 2020 <u>:23/B45.1—2020 :23</u>	Ceramic Plumbing Fixtures	IPC	
ASME A112.19.3— 2017 <u>2022/CSA B45.4—2017 :22</u>	Stainless Steel Plumbing Fixtures	IRC®	
ASME A112.19.3— 2021 <u>2022/CSA B45.4—2021 :22</u>	Stainless Steel Plumbing Fixtures	IPC	
ASME A112.19.5— 2021 <u>:22/CSA B45.15—21 :22</u>	Flush Valves and Spuds for Water Closets, Urinals and Tanks	IPC	
ASME A112.19.7— 2020 /CSA B45.10 : 2012 <u>2012 (R20)</u>	Hydromassage Bathtub Systems	IPC	

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ASME A112.3.4— 2019 <u>2018/CSA B45.9—18 (R2023)</u>	Macerating Toilet Systems and Related Components	IRC®		
ASME A112.3.4— 2018/CSA <u>B45.9— 2018 18 (R2023)</u>	Macerating Toilet Systems and Waste Pumping Systems for Plumbing Fixtures	IPC		
ASME A112.4.2— 2020 <u>2021/CSA B45.16—20 21</u>	Personal Hygiene Devices <u>for</u> Water Closet <u>s</u>	IPC		
ASME A112.4.2— 2015 <u>2021/CSA B45.16—15 21</u>	Personal Hygiene Devices <u>for</u> Water-closet <u>s</u>	IRC®		
ASME A17.1/CSA B44— 2019 <u>2022</u>	Safety Code for Elevators and Escalators	IRC®		
ASME A17.1— 2019 <u>2023/CSA</u> <u>B44— 23</u>	Safety Code for Elevators and Escalators	IBC		
ASME A17.7—2007/CSA B44.7 — 07(R2017) <u>07(R2021)</u>	Performance-based Safety Code for Elevators and Escalators	IBC		
ASSE 1002—2020/ASME A112.1002—2020/CSA B125.12 —2020	Anti-Siphon Fill Valves for Water Closet Tanks	IPC		
ASSE 1016—2017/ASME 112.1016—2017/CSA B125.16 — 2017 <u>(R2022)</u>	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	IPC	IRC®	
ASSE 1037— 2015 <u>2020/ASME</u> A112.1037— 2015 <u>2020/CSA</u> B125.37— 15 <u>:20</u>	<u>Performance requirements for</u> Pressurized Flushing Devices for Plumbing Fixtures	IPC		
ASSE 1070—2020/ASME A112.1070—2020/CSA B125.4070— 20	<u>Performance requirements for</u> Water Temperature Limiting Devices	IPC		
ASSE 1070— 2015 <u>2020/ASME</u> A112.1070— 2015 <u>2020/CSA</u> B125.70— 15 <u>:20</u>	Performance Requirements for Water-temperature-limiting Devices	IRC®		
B125.3— 18 <u>:23</u>	Plumbing Fittings	IPC	IRC®	
B137.10— 17 <u>:23</u>	Cross-linked Polyethylene/Aluminum/Cross- linked Polyethylene (PEX-AL- PEX) Composite Pressure-pipe Systems	IMC	IPC	IRC®

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B137.11—47 :23	Polypropylene (PP-R) Pipe and Fittings for Pressure Applications	IMC	IPC	IRC®	
B137.18—47 :23	Polyethylene of Raised Temperature Resistance (PE-RT) Tubing Systems for Pressure Applications	IMC	IPC	IRC®	
B137.1—47 :23	Polyethylene (PE) Pipe, Tubing and Fittings for Cold-water Pressure Services	IMC	IPC	IRC®	
B137.2—47 :23	Polyvinylchloride (PVC) Injection-moulded Gasketed Fittings for Pressure Applications	IMC	IPC	ISPSC	IRC®
B137.3—47 :23	Rigid Poly (Vinyl Chloride) polyvinylchloride (PVC) Pipe and Fittings for Pressure Applications	IMC	IPC	IPSDC	ISPSC IRC®
B137.5—47 :23	Cross-linked Polyethylene (PEX) Tubing Systems for Pressure Applications	IMC	IPC	IRC®	
B137.6—47 :23	Chlorinated Polyvinylchloride (CPVC) Pipe, Tubing and Fittings for Hot- and Cold-water Distribution Systems	IMC	IPC	ISPSC	IRC®
B137.9—47 :23	Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure-pipe Systems	IMC	IPC	IRC®	
B181.1—48 :21	Acrylonitrile-Butadiene-Styrene ABS Drain, Waste and Vent Pipe and Pipe Fittings	IPC	IPSDC	IRC®	
B181.2—48 :21	Polyvinylchloride PVC and Chlorinated Polyvinylchloride (CPVC) Drain, Waste, and Vent Pipe and Pipe Fittings	IPC	IPSDC	IRC®	
B181.3—48 :21	Polyolefin and Polyvinylidene Fluoride (PVDF) Laboratory Drainage Systems	IPC		IRC®	
B182.13—48 :21	Profile Polypropylene (PP) Sewer Pipe and Fittings for Leak-proof Sewer Applications	IPC			
B182.1—48 :21	Plastic Drain and Sewer Pipe and Pipe Fittings	IPC	IPSDC	IRC®	

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B182.2— 18 <u>.21</u>	PSM Type Polyvinylchloride PVC Sewer Pipe and Fittings	IPC	IPSDC	IRC®
B182.4— 18 <u>.21</u>	Profile Polyvinylchloride PVC Sewer Pipe and Fittings	IPC	IPSDC	IRC®
B182.6— 18 <u>.21</u>	Profile Polyethylene (PE) Sewer Pipe and Fittings for Leak-proof Sewer Applications	IPC		IRC®
B182.8— 18 <u>.21</u>	Profile Polyethylene (PE) Storm Sewer and Drainage Pipe and Fittings	IPC		IRC®
B481.1—12(R2017)	Testing and Rating of Grease Interceptors Using Lard	IPC		
B481.3—12(R2017)	Sizing, Selection, Location and Installation of Grease Interceptors	IPC		
B483.1— 07(R2017) <u>.22</u>	Drinking Water Treatment Systems	IPC		IRC®
B55.1— 2015 <u>.20</u>	Test Method for Measuring Efficiency and Pressure Loss of Drain Water Heat Recovery Units	IECC®		IRC®
B55.2— 2015 <u>.20</u>	Drain Water Heat Recovery Units	IRC®		
B602— 16 <u>.20</u>	Mechanical Couplings for Drain, Waste and Vent Pipe and Sewer Pipe	IPC	IPSDC	IRC®
B64.1.1— 11(R2016) <u>.21</u>	Atmospheric Type Vacuum Breakers, (AVB)	IPC		IRC®
B64.1.2— 11(R2016) <u>.21</u>	Pressure Vacuum Breakers, (PVB)	IPC		IRC®
B64.1.3— 11(R2016) <u>.21</u>	Spill-Resistant Pressure Vacuum Breakers (SRPVB)	IPC		IRC®
B64.10—17	Manual for the Selection and Installation of Backflow Prevention Devices <u>Preventers</u>	IPC		
B64.2.1.1— 11(R2016) <u>.21</u>	Hose Connection Dual Check Vacuum Breakers (HCDVB)	IPC		IRC®

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B64.2.1— 11(2016) :21	Hose Connection Vacuum Breakers, (HCVB) with Manual Draining Feature	IPC	
B64.2.1— 11(R2016) :21	Hose Connection Vacuum Breakers (HCVB) with Manual Draining Feature	IRC®	
B64.2.2— 11(2016) :21	Hose Connection Vacuum Breakers, Type (HCVB) with Automatic Draining Feature	IPC	IRC®
B64.2— 11(R2016) :21	Hose Connection Vacuum Breakers, Type (HCVB)	IPC	IRC®
B64.3— 11(2016) :21	Dual Check Valve Backflow Preventers with Atmospheric Port (DCAP)	IRC®	
B64.3— 11(R2016) :21	Backflow Preventers, Dual Check Valve Type with Atmospheric Port (DCAP)	IPC	
B64.4.1— 11(2016) :21	Reduced Pressure Principle backflow preventers for Fire Sprinklers (RPF) <u>protection systems (RPF)</u>	IPC	IRC®
B64.4.1— 11(R2016) :21	Reduced Pressure Principle for Fire Sprinklers (RPF)	IPC	
B64.4— 11(2016) :21	Reduced Pressure Principle Type (RP) Backflow Preventers;	IRC®	
B64.4— 11(R2016) :21	Backflow Preventers, Reduced Pressure Principle Type (RP)	IPC	
B64.5.1— 11(R2016) :21	Double Check Valve Backflow Preventers for Fire <u>Protection</u> Systems (DCVAF)	IPC	
B64.5.1— 11(2016) :21	Double Check Valve Backflow Preventers, Type for Fire Systems (DCVAF)	IRC®	
B64.5— 11(R2016) :21	Double Check Valve Backflow Preventers (DCVA)	IPC	
B64.5— 11(2016) :21	Double Check <u>Valve</u> Backflow Preventers (DCVA)	IRC®	

B64.6— 11(R2016) :21	Dual Check Valve Backflow Preventers (DuC)	IRC®		
B64.6— 11(R2016) :21	Dual Check Valve (DuC) Backflow Preventers	IPC		
B64.7— 11(R2016) :21	Laboratory Faucet Vacuum Breakers (LFVB)	IRC®		
B64.7— 11(R2016) :21	Laboratory Faucet Vacuum Breakers (LFVB)	IPC		
B79—08(R2018)	Commercial and Residential Drains and Cleanouts	IPC		
C22.2 No. 108—14(R2019)	Liquid Pumps	ISPSC		
C22.2 No. 236—15	Heating and Cooling Equipment	IMC	ISPSC	IRC®
CSA B45.5— 17 :22/IAPMO Z124— 2017 with errata dated August 2017 :2022	Plastic Plumbing Fixtures	IPC		
CSA B45.5— 2017 :22/IAPMO Z124— 2017 with Errata dated August 2017 :2022	Plastic Plumbing Fixtures	IRC®		
CSA B55.1— 2015 :20	Test Method for Measuring Efficiency and Pressure Loss of Drain Water Heat Recovery Units	IECC®		
CSA B55.2— 2015 :20	Drain Water Heat Recovery Units	IECC®	IRC®	
CSA B805- 18 :17/ICC 805-2018 (R2023)	Rainwater Harvesting Systems	IPC		
CSA O325— 16 :21	Construction Sheathing	IRC®		
CSA/ANSI NGV 2— 2016 :19	Compressed Natural Gas Vehicle Fuel Containers	IFC		
CSA/ANSI NGV 5.1— 2016 :22	Residential Fueling Appliances	IFC		
CSA/ANSI NGV 5.2— 2017 :22	Vehicle Fueling Appliances (VFA)	IFGC	IFC	
Z21.56a/CSA 4.7—2017	Gas Fired Pool Heaters	ISPSC		

CTI		Cooling Technology Institute	
Standard Reference Number	Title	Referenced in Code(s):	
ATC 105DS— 2018 <u>2019</u>	Acceptance Test Code for Dry Fluid Coolers	IECC®	
ATC 105S— 14 <u>2021</u>	Acceptance Test Code for Closed Circuit Cooling Towers	IECC®	
CTI STD 201 RS(47) <u>2021</u>	Performance Rating of Evaporative Heat Rejection Equipment	IECC®	
DASMA		Door & Access Systems Manufacturers Association International	
Standard Reference Number	Title	Referenced in Code(s):	
<u>ANSI/DASMA 105—2017</u> <u>2020</u>	Test Method for Thermal Transmittance and Air Infiltration of Garage Doors and Rolling Doors	IECC®	IRC®
ANSI/DASMA 107— 2017 <u>2020</u>	Room Fire Test Standard for Garage Doors Using Foam Plastic Insulation	IBC	
DHA		Decorative Hardwoods Association	
Standard Reference Number	Title	Referenced in Code(s):	
ANSI/HPVA HP-1— 2016 <u>2022</u>	American National Standard for Hardwood and Decorative Plywood	IBC	IRC®
DOC		U.S. Department of Commerce	
Standard Reference Number	Title	Referenced in Code(s):	
PS 1— 49 <u>22</u>	Structural Plywood	IBC	IRC®
PS 20— 05 <u>20</u>	American Softwood Lumber Standard	IBC	IRC®
PS 2—18	Performance Standard for Wood-based Structural-Use Panels	IBC	IRC®
FEMA		Federal Emergency Management Agency	

Standard Reference Number	Title	Referenced in Code(s):	
FEMA TB-11— 04 <u>23</u>	Crawlspace Construction for Buildings Located in Special Flood Hazard Area	IRC®	
FEMA TB-2— 08 <u>23</u>	Flood Damage-resistant Materials Requirements	IRC®	
FEMA-TB-11— 04 <u>23</u>	Crawlspace Construction for Buildings Located in Special Flood Hazard Areas	IBC	
FGIA		Fenestration & Glazing Alliance (formerly AAMA)	
Standard Reference Number	Title	Referenced in Code(s):	
711— 20 <u>23</u>	Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products	IBC	IRC®
712— 14 <u>23</u>	Voluntary Specification for Mechanically Attached Flexible Flashing	IRC®	
714— 20 <u>23</u>	Voluntary Specification for Liquid Applied Flashing Used to Create a Water-resistive Seal around Exterior Wall Openings in Buildings	IBC	IRC®
AAMA/NSA 2100— 20 <u>22</u>	Specifications for Sunrooms	IRC®	
AAMA/WDMA/CSA 101/I.S.2/A 6440— 17 <u>22</u>	North American Fenestration Standard/Specifications for Windows, Doors and Unit Skylights	IECC®	
FM		FM Approvals	
Standard Reference Number	Title	Referenced in Code(s):	
4474— 2014 <u>2020</u>	American National Standard for Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures	IBC	IRC®
GA		Gypsum Association	

Standard Reference Number	Title	Referenced in Code(s):
GA 216— 2018 <u>2021</u>	Application and Finishing of Gypsum Panel Products	IBC
GA 600— 2018 <u>2021</u>	Fire-resistance and Sound Control Design Manual, 22nd <u>23rd</u> Edition	IBC
GA-253— 2018 <u>2021</u>	Application of Gypsum Sheathing	IRC®
IAPMO		
IAPMO Group		
Standard Reference Number	Title	Referenced in Code(s):
<u>ANSI/CAN/IAPMO Z1001—2016</u> <u>2021</u>	Prefabricated Gravity Grease Interceptors	IPC
ASPE/IAPMO Z1034-2015(R2020)	Test Method for Evaluating Roof Drain Performance	IPC
CSA B45.5—47 :22 /IAPMO Z124— 2017 <u>2022</u> with errata dated August 2017	Plastic Plumbing Fixtures	IPC
IAPMO Z124.7—2013(R2018)	Prefabricated Plastic Spa Shells	ISPSC
IAPMO/ANSI Z1157—2014e1(R2019)	Ball Valves	IPC
IES		
Illuminating Engineering Society		
Standard Reference Number	Title	Referenced in Code(s):
ANSI/ASHRAE/IESNA 90.1— 2018 <u>2022</u>	Energy Standard for Buildings, Except Low-rise Residential Buildings	IECC®
IIAR		
International Institute of Ammonia Refrigeration		
Standard Reference Number	Title	Referenced in Code(s):
ANSI/IIAR 2—2014, including Addendum A <u>2021</u>	Design of Safe Closed-circuit Ammonia Refrigeration Systems	IFC

ANSI/IIAR 9— 2018 <u>2020</u>	Standard for Recognized and Generally Accepted Good Engineering Practices (RAGAGEP) for Existing Closed-circuit Ammonia Refrigeration Systems <u>Minimum System Safety Requirements for Existing Closed-Circuit Ammonia Refrigeration Systems</u>	IFC		
IKECA		International Kitchen Exhaust Cleaning Association		
Standard Reference Number	Title	Referenced in Code(s):		
ANSI/IKECA C10— 2016 <u>2021</u>	Standard for the Methodology for Cleaning of Commercial Kitchen Exhaust Systems	IFC		
MHI		Material Handling Institute		
Standard Reference Number	Title	Referenced in Code(s):		
ANSI MH29.1— 08 <u>2020</u>	Safety Requirements for Industrial Scissors Lifts	IBC		
ANSI/MH16.1— 12 <u>2021</u>	Design, Testing and Utilization of Industrial Steel Storage Racks	IBC		
MSS		Manufacturers Standardization Society of the Valve and Fittings Industry		
Standard Reference Number	Title	Referenced in Code(s):		
ANSI SP 58— 2010 <u>2023</u>	Pipe Hangers and Supports—Materials, Design and Manufacture, <u>Selection, Application and Installation</u>	IFGC	IMC	IRC®
SP-110— 2010 <u>2023</u>	Ball Valves, Threaded, Socket Welding, Solder Joint, Grooved and Flared Ends (incl. a 2010 Errata Sheet)	IPC	IRC®	
SP-122— 2017 <u>2023</u>	Plastic Industrial Ball Valves	IPC	IRC®	
SP-139— 2014 <u>2022</u>	Copper Alloy Gate, Globe, Angle and Check Valves for Low Pressure/Low Temperature Plumbing Applications	IPC	IRC®	

SP-42— 2013 <u>2022</u>	Corrosion Resistant Gate, Globe, Angle and Check Valves with Flanged and Butt Weld Ends (Glasses 150, 300 & 600)	IRC®	
SP-67— 2011 <u>2022</u>	Butterfly Valves	IPC	IRC
SP-70— 2011 <u>2023</u>	Gray Iron Gate Valves, Flanged and Threaded Ends	IPC	IRC®
SP-70— 2013 <u>2023</u>	Gray Iron Gate Valves, Flanged and Threaded Ends	IPC	
SP-72— 2010a <u>2023</u>	Ball Valves with Flanged or Butt-welding Ends for General Service	IPC	IRC®
SP-78— 2011 <u>2023</u>	Cast Iron Plug Valves, Flanged and Threaded Ends	IPC	
SP-78— 2011 <u>2023</u>	Cast Iron Plug Valves, Flanged and Threaded Ends	IRC®	
SP-80— 2013 <u>2019</u>	Bronze Gate, Globe, Angle and Check Valves	IPC	IRC®
NBBI		National Board of Boiler and Pressure Vessel Inspectors	
Standard Reference Number	Title	Referenced in Code(s):	
NBIC— 2017 <u>2023</u>	National Board Inspection Code, Part 3 (<u>ANSI/NB23</u>)	IMC	
NCMA		National Concrete Masonry Association	
Standard Reference Number	Title	Referenced in Code(s):	
TEK 5— 84 <u>B(2005)</u>	Details <u>Detailing for Concrete Masonry Fire Walls</u>	IBC	
NEMA		National Electrical Manufacturers Association	
Standard Reference Number	Title	Referenced in Code(s):	
250— 2018 <u>2020</u>	Enclosures for Electrical Equipment (1,000 Volt Maximum)	IFC	
NEMA <u>ANSI Z535_1</u> —2017	<u>ANSI/NEMA Color Chart</u> <u>American National Standard for Safety Colors</u>	ISPSC	

NEMA MG1—2016	Motors and Generators	IECC®			
NFPA	National Fire Protection Association				
Standard Reference Number	Title	Referenced in Code(s):			
02—19 23	Hydrogen Technologies Code	IFC			
04—21 24	Standard for Integrated Fire Protection and Life Safety System Testing	IBC		IFC	
105—19 22	Standard for Smoke Door Assemblies and Other Opening Protectives	IMC	IPMC	IBC	IFC
10—21 22	Standard for Portable Fire Extinguishers	IPMC	IBC	IFC	
110—19 22	Standard for Emergency and Standby Power Systems	IBC		IFC	
111—19 22	Standard on Stored Electrical Energy Emergency and Standby Power Systems	IBC		IFC	
1123—19 22	Code for Fireworks Display	IFC			
1124—06 22	Code for the Manufacture, Transportation, Storage and Retail Sales of Fireworks and Pyrotechnic Articles	IFC			
1124—17 22	Code for the Manufacture, Transportation and Storage of Fireworks and Pyrotechnic Articles	IBC		IFC	
1125—17 22	Code for the Manufacture of Model Rocket and High-power Rocket Motors	IFC			
1142—17 22	Standard on Water Supplies for Suburban and Rural Fire Fighting	IFC			
11—16 21	Standard for Low-, Medium, and High Expansion Foam	IBC		IFC	
12A—19 22	Standard on Halon 1301 Fire Extinguishing Systems	IPMC	IBC	IFC	

12— 45 <u>22</u>	Standard on Carbon Dioxide Extinguishing Systems	IBC			
12— 48 <u>22</u>	Standard on Carbon Dioxide Extinguishing Systems	IPMC		IFC	
13D— 49 <u>22</u>	Standard for the Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes	IBC	IFC		IRC®
13R— 49 <u>22</u>	Standard for the Installation of Sprinkler Systems in Low-rise Residential Occupancies	IBC	IFC		IRC®
13— 49 <u>22</u>	Standard for Installation of Sprinkler Systems, <u>2022 and 2019 editions</u>	IBC		IFC	
14— 49 <u>22</u>	Standard for the Installation of Standpipe and Hose System	IBC		IFC	
15— 47 <u>22</u>	Standard for Water Spray Fixed Systems for Fire Protection	IFC			
170— 48 <u>21</u>	Standard for Fire Safety and Emergency Symbols	IBC		IFC	
2001— 48 <u>22</u>	Standard on Clean Agent Fire Extinguishing Systems	IPMC	IBC		IFC
204— 48 <u>21</u>	Standard for Smoke and Heat Venting	IPMC		IFC	
20— 49 <u>22</u>	Standard for the Installation of Stationary Pumps for Fire Protection	IBC		IFC	
211— 49 <u>22</u>	Standard for Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances	IFGC	IMC	IBC	IRC®
221— 24 <u>24</u>	Standard for High Challenge Fire Walls, Fire Walls and Fire Barrier Walls	IBC			
22— 48 <u>23</u>	Standard for Water Tanks for Private Fire Protection	IFC			
232— 47 <u>22</u>	Standard for the Protection of Records	IFC			

241— 19 <u>22</u>	Standard for Safeguarding Construction, Alteration and Demolition Operations	IFC	
24— 19 <u>22</u>	Standard for Installation of Private Fire Service Mains and Their Appurtenances	IFC	
252— 17 <u>22</u>	Standard Methods of Fire Tests of Door Assemblies	IBC	
253— 19 <u>23</u>	Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source	IBC	IFC
257— 17 <u>22</u>	Standard for Fire Test for Window and Glass Block Assemblies	IBC	
259— 18 <u>23</u>	Standard Test Method for Potential Heat of Building Materials	IBC	IRC®
25— 20 <u>23</u>	Standard for the Inspection, Testing and Maintenance of Water-based Fire Protection Systems	IPMC	IFC
260— 19 <u>23</u>	Methods of Tests and Classification System for Cigarette Ignition Resistance of Components of Upholstered Furniture	IFC	
261— 19 <u>23</u>	Standard Method of Test for Determining Resistance of Mock-up Upholstered Furniture Material Assemblies to Ignition by Smoldering Cigarettes	IFC	
262— 19 <u>23</u>	Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-handling Spaces	IMC	
265— 19 <u>23</u>	Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile or Expanded Vinyl Wall Coverings on Full Height Panels and Walls	IBC	IFC

268—19 <u>22</u>	Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source	IBC			
275—17 <u>22</u>	Standard Method of Fire Tests for the Evaluation of Thermal Barriers	IBC		IRC®	
276—19	Standard Method of Fire Tests for Determining the Heat Release Rate of Roofing Assemblies with Combustible Above-deck Roofing Components	IBC			
276—15 <u>23</u>	Standard Method of Fire Tests for Determining the Heat Release Rate of Roofing Assemblies with Combustible Above-Deck Roofing Components	IRC®			
285—19 <u>22</u>	Standard Fire Test Method for the Evaluation of Fire Propagation Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components	IBC			
286—15 <u>23</u>	Standard Methods of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth	IBC			
288—17 <u>22</u>	Standard Methods of Fire Tests of Horizontal Fire Door Assemblies Installed in Horizontal in Fire-resistance-related floor Systems <u>Rated Assemblies</u>	IBC			
289—19 <u>23</u>	Standard Method of Fire Test for Individual Fuel Packages	IBC		IFC	
2—19	Hydrogen Technologies Code	IFGC		IMC	
30A—21 <u>24</u>	Code for Motor Fuel Dispensing Facilities and Repair Garages	IFGC	IMC	IBC	IFC
30B—19 <u>23</u>	Code for the Manufacture and Storage of Aerosol Products	IFC			
30—21 <u>24</u>	Flammable and Combustible Liquids Code	IBC		IFC	

318— 18 <u>22</u>	Standard for the Protection of Semiconductor Fabrication Facilities	IFC		
32— 16 <u>21</u>	Standard for Dry Cleaning Facilities	IBC	IFC	
33— 18 <u>21</u>	Standard for Spray Application Using Flammable or Combustible Materials	IFC		
34— 18 <u>21</u>	Standard for Dipping, Coating and Printing Processes Using Flammable or Combustible Liquids	IFC		
35— 16 <u>21</u>	Standard for the Manufacture of Organic Coatings	IFC		
37— 18 <u>21</u>	Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines	IFGC	IMC	
385— 17 <u>22</u>	Standard for Tank Vehicles for Flammable and Combustible Liquids	IFC		
400— 19 <u>22</u>	Hazardous Materials Code	IFC		
407— 17 <u>22</u>	Standard for Aircraft Fuel Servicing	IFC		
409— 16 <u>22</u>	Standard for for <u>on</u> Aircraft Hangars	IFGC	IBC	IFC
40— 19 <u>22</u>	Standard for the Storage and Handling of Cellulose Nitrate Film	IBC	IFC	
418— 16 <u>21</u>	Standard for Heliports	IBC		
45— 19 <u>23</u>	Standard on Fire Protection Laboratories Using Chemicals (2015 Edition)	IBC	IFC	
484— 19 <u>22</u>	Standard for Combustible Metals	IBC	IFC	
495— 18 <u>23</u>	Explosive Materials Code	IFC		
498— 18 <u>23</u>	Standard for Safe Havens and Interchange Lots for Vehicles Transporting Explosives	IFC		

501— 17 <u>22</u>	Standard on Manufactured Housing	IRC®			
505— 18 <u>23</u>	Fire Safety Standard for Powered Industrial Trucks, Including Type Designations, Areas of Use, Maintenance and Operation	IFC			
51— 18 <u>23</u>	Design and Installation of Oxygen-fuel Gas Systems for Welding, Cutting and Allied Processes	IFGC	IPC	IFC	
52— 19 <u>22</u>	Vehicular Gaseous Fuel System Code	IFC			
55— 19 <u>23</u>	Compressed Gases and Cryogenic Fluids Code	IPC	IFC		
56— 20 <u>23</u>	Standard for Fire and Explosion Prevention during Cleaning and Purging of Flammable Gas Piping Systems	IFC			
58— 17 <u>23</u>	Liquefied Petroleum Gas Code	IFGC			
58— 20 <u>23</u>	Liquefied Petroleum Gas Code	IMC	IBC	IFC	IRC®
59A— 19 <u>22</u>	Standard for the Production, Storage and Handling of Liquefied Natural Gas (LNG)	IFC			
655— 17 <u>19</u>	Standard for the Prevention of Sulfur Fires and Explosions	IBC	IFC		
68— 13 <u>23</u>	Standard on Explosion Protection by Deflagration Venting	IFC			
701— 19 <u>23</u>	Standard Methods of Fire Tests for Flame Propagation of Textiles and Films	IBC	IFC		
703— 21 <u>24</u>	Standard for Fire Retardant-treated Wood and Fire-retardant Coatings for Building Materials	IFC			
704— 17 <u>22</u>	Standard System for the Identification of the Hazards of Materials for Emergency Response	IMC	IBC	IFC	

72— 19 <u>22</u>	National Fire Alarm and Signaling Code	IMC				
750— 19 <u>23</u>	Standard on Water Mist Fire Protection Systems	IPMC	IBC	IFC		
76— 16 <u>20</u>	Standard for the Fire Protection of Telecommunications Facilities	IFC				
77— 14 <u>24</u>	Recommended Practice on Static Electricity	IFC				
780— 17 <u>23</u>	Standard for the Installation of Lightning Protection Systems	IFC				
80— 19 <u>22</u>	Standard for Fire Doors and Other Opening Protectives	IMC	IPMC	IBC	IFC	
85— 19 <u>23</u>	Boiler and Combustion System Hazards Code	IFGC	IMC	IBC	IFC	IRC®
86— 19 <u>23</u>	Standard for Ovens and Furnaces	IFC				
88A— 19 <u>23</u>	Standard for Parking Structures	IFGC				
914— 19 <u>23</u>	Code for Fire Protection of Historic Structures	IFC				
92— 18 <u>21</u>	Standard for Smoke Control Systems	IMC	IBC	IFC		
96— 20 <u>24</u>	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations	IMC		IFC		
99— 21 <u>24</u>	Health Care Facilities Code	IMC	IPC	IBC	IFC	
1221 <u>1225</u> — 19 <u>2022</u>	Standard for the Installation, Maintenance and Use of Emergency Services Communications Systems	IFC				
NFPA 101— 21 <u>24</u>	Life Safety Code	IEBC				
NFPA 13R—19	Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height	IEBC				

NFPA 99—21	Health Care Facilities Code	IEBC	
NFRC		National Fenestration Rating Council, Inc.	
Standard Reference Number	Title	Referenced in Code(s):	
100— 2020 <u>2023</u>	Procedure for Determining Fenestration Products <i>U</i> -factors	IECC®	IRC®
200— 2020 <u>2023</u>	Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence	IECC®	IRC®
203— 2017 <u>2023</u>	Procedure for Determining Translucent Fenestration Product Visible Transmittance at Normal Incidence <u>Procedure for Determining Visible Transmittance of Tubular Daylighting Devices</u>	IECC®	
400— 2020 <u>2023</u>	Procedure for Determining Fenestration Product Air Leakage	IECC®	IRC®
NSF		NSF International	
Standard Reference Number	Title	Referenced in Code(s):	
14— 2017 <u>2020</u>	Plastic Piping System Components and Related Materials	IMC	IRC®
14— 2018 <u>2020</u>	Plastic Piping System Components and Related Materials	IPC	
184— 2014 <u>2019</u>	Residential Dishwashers	IPC	
18— 2016 <u>2020</u>	Manual Food and Beverage Dispensing Equipment	IPC	
350— 2017a <u>2020</u>	Onsite Residential and Commercial Water Reuse Treatment Systems	IPC	IRC®
358-1— 2017 <u>2021</u>	Polyethylene Pipe and Fittings for Water-based Ground-source "Geothermal" Heat Pump Systems	IMC	IRC®

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358-3— 2016 <u>2021</u>	Cross-linked Polyethylene (PEX) Pipe and Fittings for Water-based Ground-source (Geothermal) Heat Pump Systems	IMC	IRC®
358-4— 2017 <u>2018</u>	Polyethylene of Raised Temperature (PE-RT) Pipe and Fittings for Water-based Ground-source (Geothermal) Heat Pump Systems	IMC	IRC®
359— 2011(R2016) <u>2018</u>	Valves for Crosslinked Polyethylene (PEX) Water Distribution Tubing Systems	IPC	IRC®
372— 2016 <u>2020</u>	Drinking Water Systems Components—Lead Content	IPC	IRC®
3— 2017 <u>2019</u>	Commercial Warewashing Equipment	IPC	
40— 2016 <u>2020</u>	Residential Wastewater Treatment Systems	IPSDC	
41— 2016 <u>2018</u>	Nonliquid Saturated Treatment Systems (Composing Toilets)	IPSDC	IRC®
42— 2017 <u>2021</u>	Drinking Water Treatment Units—Aesthetic Effects	IRC®	
50— 2017 <u>2020</u>	Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational <u>Water</u> Facilities	IPC	IRC®
53— 2017 <u>2020</u>	Drinking Water Treatment Units—Health Effects	IPC	IRC®
58— 2017 <u>2020</u>	Reverse Osmosis Drinking Water Treatment Systems	IPC	IRC®
61— 2016 <u>2020</u>	Drinking Water System Components—Health Effects	IPC	IRC®
62— 2017 <u>2021</u>	Drinking Water Distillation Systems	IPC	IRC®
PDI	Plumbing and Drainage Institute		
Standard Reference Number	Title	Referenced in Code(s):	

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PDI G101 (2012) <u>(2017)</u>	Testing and Rating Procedure for <u>Hydro Mechanical Grease Interceptors with Appendix of Sizing and Installation Data and Maintenance</u>	IPC
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PHTA	Pool & Hot Tub Alliance (formerly APSP)	
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Standard Reference Number	Title	Referenced in Code(s):
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ANSI/APSP/ICC 15— 2011 <u>2021</u>	American National Standard for Residential Swimming Pool and Spa <u>Energy Efficiency includes Addenda A Approved January 9, 2019</u>	ISPSC
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ANSI/APSP/ICC 16— 2017 <u>2022</u>	American National Standard for Suction Outlet Fittings (SOFA) for Use in Pools, Spas, and Hot Tubs	ISPSC
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ANSI/APSP/ICC 4— 2012 <u>2022</u>	American National Standard for Aboveground/Onground Residential Swimming Pools— <u>includes Addenda A Approved April 4, 2019</u>	ISPSC
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ANSI/APSP/ICC/NPC 12 - 2016 <u>2023</u>	American National Standard for the Plastering of Swimming Pools	ISPSC
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PLIB	Pacific Lumber Inspection Bureau (formerly WCLIB)	
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Standard Reference Number	Title	Referenced in Code(s):
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AITC 200— 09 <u>20</u>	Manufacturing Quality Control Systems Manual for Structural Glued Laminated Timber	IBC
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PSAI	Portable Sanitation Association International	
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Standard Reference Number	Title	Referenced in Code(s):
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PSAI/ANSI <u>ANSI/PSAI Z4.3—2016</u>	<u>American National Standard for Sanitation for Non-sewered Waste-disposal Systems; Minimum Requirements</u>	IPC
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RESNET	Residential Energy Services Network, Inc.	
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Standard Reference Number	Title	Referenced in Code(s):
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ANSI/RESNET/ICC 301— 2019 <u>2022</u>	Standard for the Calculation and Labeling of the Energy Performance of Dwelling and Sleeping Units using an Energy Rating Index	IECC®		
ANSI/RESNET/ICC 380— 2019 <u>2022</u>	Standard for Testing Airtightness of Building, Dwelling Unit and Sleeping Unit Enclosures; Airtightness of Heating and Cooling Air Distribution Systems, and Airflow of Mechanical Ventilation Systems	IECC®		
RMI		Rack Manufacturers Institute		
Standard Reference Number	Title	Referenced in Code(s):		
ANSI/MH16.1— 12 <u>21</u>	Specification for Design, Testing and Utilization of Industrial Steel Storage Racks	IBC		
SDI		Steel Deck Institute		
Standard Reference Number	Title	Referenced in Code(s):		
SDI-QA/QG-SD—2017 <u>2022</u>	Standard for Quality Control and Quality Assurance for Installation of Steel Deck <u>Standard for Steel Deck</u>	IBC		
SJI		Steel Joist Institute		
Standard Reference Number	Title	Referenced in Code(s):		
SJI 100— <u>2020</u>	45th Edition Standard Specifications, Load Tables and Weight Tables for K-Series, LH-Series, DLH-Series and Joist Girders	IBC		
SMACNA		Sheet Metal and Air Conditioning Contractors' National Association, Inc.		
Standard Reference Number	Title	Referenced in Code(s):		
SMACNA/ANSI ANSI/SMACNA 4th Edition— 2016 <u>2020</u>	HVAC Duct Construction Standards—Metal and Flexible, 4th Edition (ANSI) (ANSI/SMACNA 006-2020)	IFGC	IMC	IRC®

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SMAGNA/ANSI <u>ANSI/SMACNA — 2nd edition</u> 2013	Round Industrial Duct Construction Standards, 3rd <u>2nd Edition</u> (ANSI/SMACNA 005- 2013)	IMC
SMAGNA/ANSI ANSI/SMACNA — 2011 <u>2nd Edition 2004</u>	Rectangular Industrial Duct Construction Standards, 2nd <u>1st Edition</u> (ANSI/SMACNA 002- 2004)	IMC
SMACNA— <u>1st edition</u> 2015	SMACNA Phenolic Duct Construction Standards, 1st <u>2nd Edition</u> (ANSI) (ANSI/SMACNA 022-2015)	IMC
SMACNA— 10 <u>2021</u>	Fibrous Glass Duct Construction Standards 7th <u>8th</u> edition	IRC®
SMACNA— 2010 <u>2021</u>	Fibrous Glass Duct Construction Standards, 7th Edition <u>8th edition</u>	IMC
SMACNA— <u>2nd edition</u> 2012	HVAC Air Duct Leakage Test Manual Second Edition (ANSI/SMACNA 016-2012)	IECC®
SPRI Single-Ply Roofing Institute		
Standard Reference Number	Title	Referenced in Code(s):
ANSI/SPRI GT-1— 2016 <u>21</u>	Test Standard for Gutter Systems	IBC
ANSI/SPRI VF-1— 17 <u>21</u>	External Fire Design Standard for Vegetative Roofs	IBC
ANSI/SPRI/FM 4435-ES-1— 17 <u>21</u>	Wind Test Design Standard for Edge Systems Used with Low Slope Roofing Systems	IBC
TIA Telecommunications Industry Association		
Standard Reference Number	Title	Referenced in Code(s):
ANSI/TIA 222-H— 2017 <u>1-2023</u>	Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures	IBC
TMS The Masonry Society		

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Standard Reference Number	Title	Referenced in Code(s):	
216— 2019 <u>14 (19)</u>	Standard Method Code Requirements for Determining Fire Resistance of Concrete and Masonry Construction Assemblies	IBC	
302—2018	Standard Method for Determining the Sound Transmission Class Rating s for Masonry Walls <u>Assemblies</u>	IBC	
402— 2016 <u>2022</u>	Building Code <u>Requirements</u> for Masonry Structures	IBC	IRC®
404— 2016 <u>2023</u>	Standard for the Design of Architectural Cast Stone	IBC	IRC®
504— 2016 <u>2023</u>	Standard for the Fabrication of Architectural Cast Stone	IBC	
602— 2016 <u>2022</u>	Specification for Masonry Structures	IBC	IRC®
604— 2016 <u>2023</u>	Standard for the Installation of Architectural Cast Stone	IBC	
TPI		Truss Plate Institute	
Standard Reference Number	Title	Referenced in Code(s):	
<u>ANSI/TPI 1—2014</u> <u>2022</u>	National Design Standard for Metal-plate-connected Wood Truss Construction	IBC	IRC®
UL		UL LLC	
Standard Reference Number	Title	Referenced in Code(s):	
1004-1—12	Rotating Electrical Machines General Requirements— with <u>revisions through August</u> 2019 <u>November 2020</u>	ISPSC	
1026—2012	Electric Household Cooking and Food Serving Appliances—with revisions through July 2018 <u>March 2021</u>	IRC®	

103—2010	Factory-built Chimneys, for Residential Type and Building Heating Appliances—with Revisions through March 2017 <u>September 2021</u>	IFGC	IMC	IBC	IRC®
1042—2009	Electric Baseboard Heating Equipment—with revisions through December 2016 <u>February 2021</u>	IRC®			
1081—2016	Swimming Pool Pumps, Filters and Chlorinators—with revisions through October 2017 <u>July 2020</u>	ISPSC			
109—97	Tube Fittings for Flammable and Combustible Fluids, Refrigeration Service and Marine Use <u>with revisions through May 2020</u>	IMC			
10A—2009	Tin Clad Fire Doors—with Revisions through July <u>20</u> , 2018	IBC			
10B—2008	Fire Tests of Door Assemblies—with Revisions through February 2015 <u>May 2020</u>	IBC			
10C—2016	Positive Pressure Fire Tests of Door Assemblies - <u>with revisions through May 2021</u>	IBC	IFC		
10D—2017	Standard for Fire Tests of Fire Protective Curtain Assemblies	IBC			
1240—2005	Electric Commercial Clothes-Drying Equipment—with revisions through March 2016 <u>September 2021</u>	IMC			
1261— <u>2001</u>	Electric Water Heaters for Pools and Tubs—with revisions through September 2017	IMC			
1275— 2014 <u>2021</u>	Flammable Liquid Storage Cabinets— <u>with revisions through February 2018</u>	IFC			
127—2011	Factory-built Fireplaces—with Revisions through July 2016 <u>February 2020</u>	IFGC	IMC	IBC	IECC® IRC®

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1316— 1994 <u>2018</u>	Glass-Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols and Alcohol-gasoline Mixtures <u>Flammable and Combustible Liquids—with revisions through May 2006 March 2019</u>	IFC		
1369—18	Standard for Aboveground Piping for Flammable and Combustible Liquids <u>with revisions through August 2020</u>	IMC		
1370—11	Unvented Alcohol Fuel Burning Decorative Appliances—with revisions through March 25 , 2016	IMC		
1389— 2017 <u>19</u>	Plant Oil Extraction Units Equipment for Installation and Use in Ordinary (Unclassified) Locations and Hazardous (Classified) Locations <u>with revisions through October 2020</u>	IFC		
142—2006	Steel Aboveground Tanks for Flammable and Combustible Liquids—with revisions through August 2014 <u>January 2021</u>	IFC		
1479—2015	Fire Tests of Penetration Firestops <u>with revisions through May 2021</u>	IMC	IBC	IRC®
1482—2011	Solid-fuel Type Room Heaters—with Revisions through August 2015 <u>February 2020</u>	IMC	IBC	IRC®
1489—2016	Fire Tests of Fire Resistant Pipe Protection Systems Carrying Combustible Liquids <u>with revisions through October 2021</u>	IBC		IFC
14B—2008	Sliding Hardware for Standard Horizontally Mounted Tin Clad Fire Doors—with Revisions through July 2017 <u>September 2021</u>	IBC		
14C—2006	Swinging Hardware for Standard Tin Clad Fire Doors Mounted Singly and in Pairs—with Revisions through July 2017 <u>October 2021</u>	IBC		

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1563—2009	Standard for Electric Spas, Hot Tubs and Associated Equipment— with revisions through October 2017 <u>September 2020</u>	IMC	ISPSC	IRC®
1703—2002	Flat-plate Photovoltaic Modules and Panels— with Revisions through September 2018 <u>November 2019</u>	IBC		IRC®
1738—2010	Venting Systems for Gas Burning Appliances, Categories II, III and IV with revisions through November 2014 <u>August 2021</u>	IFGC		IRC®
1741—2010	Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources— with Revisions through February 2019 <u>June 2021</u>	IBC	IFC	IRC®
174—04	Household Electric Storage Tank Water Heaters— with revisions through December 2016 <u>October 2021</u>		IMC	
1777— 2007 <u>2015</u>	Chimney Liners— with Revisions through April 2014 <u>2019</u>	IFGC	IMC	IBC
1784—2015	Air Leakage Tests of Door Assemblies with revisions through February 2020		IBC	
180— 2012 <u>2019</u>	Liquid-level Indicating Gauges for Oil Burner Fuels and Other Combustible Liquids— with revisions through May 2017 <u>August 2021</u>	IMC		IRC®
1812—2013	Ducted Heat Recovery Ventilators— with revisions through July 2018 <u>April 2021</u>		IMC	
1815—2012	Nonducted Heat Recovery Ventilators— with revisions through July 2018 <u>April 2021</u>		IMC	
181— 05 <u>13</u>	Factory-made Air Ducts and Air Connectors— with revisions through April 2017		IMC	

1887—04	Fire Tests of Plastic Sprinkler Pipe for Visible Flame and Smoke Characteristics—with revisions through July 2017 <u>October 2021</u>	IMC			
1897—2015	Uplift Tests for Roof Covering Systems with revisions through <u>September 2020</u>	IBC	IRC®		
1974— 2017 <u>2018</u>	Standard for Evaluation for Repurposing Batteries	IFC			
1978—2010	Grease Ducts—with revisions through April 2017 <u>October 2021</u>	IMC			
1994—2015	Luminous Egress Path Marking Systems <u>with revisions through</u> <u>July 2020</u>	IBC	IFC		
1996—2009	Electric Duct Heaters—with revisions through July 2016 <u>September 2021</u>	IMC	IRC®		
2011—2019	Outline for <u>investigation for</u> Machinery <u>with revisions through</u> <u>October 2020</u>	IFC			
2017—2008	General-purpose Signaling Devices and Systems—with revisions through January 2016 <u>December 2016</u>	IFC	ISPSC		
2024—2014	Safety Optical-fiber Cable Routing Assemblies and Communications Cable Raceway—with revisions through August 2015	IMC			
2075—2013	Standard for Gas and Vapor Detectors and Sensors with Revisions through December 2017 <u>August 2021</u>	IMC	IBC	IFC	IRC®
2079—2015	Tests for Fire Resistance of Building Joint Systems - <u>with revisions through</u> <u>July 2020</u>	IBC	IFC		
207—2009	Refrigerant-containing Components and Accessories, Nonelectrical—with revisions through June 2014 <u>January 2020</u>	IMC			

2152— 2016 <u>2021</u>	Outline of Investigation for Special Purpose Nonmetallic Containers and Tanks for Specific Combustible or Noncombustible Liquids	IFC				
2158A—2013	Outline of Investigation for Clothes Dryer Transition Duct— with revisions through April 2017 <u>October 2021</u>	IFGC	IMC	IRC®		
2158— 2018 <u>2021</u>	Electric Clothes Dryers	IMC				
2162—2014	Outline of Investigation for Commercial Wood-fired Baking Ovens—Refractory Type -with <u>revisions through August 2019</u>	IMC				
217—2015	Single and Multiple Station Smoke Alarms—with Revisions through November 2016 <u>April 2021</u>	IBC	IFC	IRC®		
2196—2017	Standard for Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables - with revisions through <u>December 2020</u>	IBC		IFC		
2200— 2012 <u>2020</u>	Stationary Engine Generator Assemblies— with Revisions through October 2015	IFGC	IMC	IBC	IFC	IRC®
2208—2010	Solvent Distillation Units—with revisions through <u>June 2020</u>	IFC				
2518—2016	Air Dispersion Systems - <u>with</u> <u>revisions June 2021</u>	IMC				
2524—2019	Standard for In-building 2-way Emergency Radio Communication Enhancement Systems - <u>revisions through February 2019</u>	IFC				
263—11	Fire Tests of Building Construction and Materials—with Revisions through March 2018 <u>August 2021</u>	IBC				
268A—2008	Smoke Detectors for Duct Application—with revisions through August 2016 <u>2020</u>	IMC				

268—2016	Smoke Detectors for Fire Alarm Systems—with revisions through July 2016 <u>October 2019</u>	IMC	IPMC	IBC	IFC	IRC®
2703—2014	Mounting Systems, Mounting Devices, Clamping/Retention Devices and Ground Lugs for Use with Flat-plate Photovoltaic Modules and Panels—with Revisions through December 2019 <u>March 2021</u>	IBC		IRC®		
2846—2014	Fire Test of Plastic Water Distribution Plumbing Pipe for Visible Flame and Smoke Characteristics—with revisions through December 2016 <u>January 2021</u>	IMC				
300— 2005 <u>2019</u>	Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment—with revisions through December 2014	IFC				
30—1995	Metal Safety Cans—with revisions through June 2014 <u>September 2019</u>	IFC				
325—2017	Door, Drapery, Gate, Louver and Window Operations and Systems <u>with revisions through February 2020</u>	IBC	IFC		IRC®	
343— 2017 <u>2008</u>	Pumps for Oil-burning Appliances <u>with revisions through December 2017</u>	IMC		IRC®		
372—2007	Automatic Electrical Controls for Household and Similar Use—Part 2: Particular Requirements for Burner Ignition Systems and Components—with revisions through July 2012 <u>June 2012</u>	ISPSC				
391—2010	Solid-fuel and Combination-fuel Central and Supplementary Furnaces—with revisions through June 2014 <u>August 2019</u>	IMC				
399—2017	Drinking-Water Coolers—with revisions through August 2018 <u>July 2020</u>	IPC				

427—11	Standard for Refrigerating Units <u>with revisions through February 2014</u>	IMC		
430—2015	Waste Disposers—with revisions through February 2018 <u>September 2021</u>	IPC		
441—16	Gas Vents—with revisions through July 2016 <u>August 2019</u>	IRC®		
471—2010	Commercial Refrigerators and Freezers—with revisions through November 2018 <u>September 2019</u>	IMC		
484—14	Standard for Room Air Conditioners <u>with revisions through May 2019</u>	IMC		
507—2017	Electric Fans—with revisions through August 2018 <u>May 2020</u>	IMC	IRC®	
508—2018	Industrial Control Equipment <u>with revisions through July 2021</u>	IMC	IPC	IRC®
515—2015	Standard for Electrical Resistance Trace Heating for Commercial Applications	IECC®		
536— 2014 <u>2021</u>	Flexible Metallic Hose	IMC	IRC®	
555C—2014	Ceiling Dampers—with Revisions through May 2017 <u>January 2021</u>	IMC	IBC	
555S—2014	Smoke Dampers—with Revisions through October 2016 <u>2020</u>	IMC	IBC	
555—2006	Fire Dampers—with Revisions through October 2016 <u>2020</u>	IBC		
55A—2004	Materials for Built-up Roof Coverings	IBC	IRC®	
580—2006	Test for Uplift Resistance of Roof Assemblies—with Revisions through October 2018 <u>March 2019</u>	IBC	IRC®	

60335-2-1000-17	Standard for Household and Similar Electrical Appliances: Particular Requirements for Electrically Powered Pool Lifts; with revisions through September 29, 2017	ISPSC		
60601-1—2003	Medical Electrical Equipment, Part I: General Requirements for Safety - <u>with revisions through April 2006</u>	IFC		
60950-1— 2014 <u>2007</u>	Information Technology Equipment—Safety Requirements <u>with revisions through May 2019</u>	IFC		
61730-1—2017	Photovoltaic (PV) Module Safety Qualification - Part 1: Requirements for Construction - <u>with revisions through April 2020</u>	IBC	IRC®	
61730-2—2017	Photovoltaic (PV) Module Safety Qualification - Part 2: Requirements for Testing - <u>with revisions through April 2020</u>	IBC	IRC®	
62368-1— 2014 <u>19</u>	Audio/video, Information and Communication Technology Equipment—Safety Requirements - <u>with revisions through October 2021</u>	IFC		
651—2011	Schedule 40 <u>and Schedule 80;</u> Type EB and A Rigid PVC Conduit and Fittings—with Revisions through June 2016 <u>March 2020</u>	IFGC	IRC®	
705—2017	Power Ventilators—with revisions through October 2018 <u>August 2021</u>	IFGC	IMC	IRC®
710B—2011	Recirculating Systems—with Revisions through August 2014 <u>February 2019</u>	IMC	IBC	IFC
710—12	Exhaust Hoods for Commercial Cooking Equipment—with Revisions through November 2019 <u>February 2021</u>	IECC®		

791—2006	Standard for Residential Incinerators— with revisions through November 2014 <u>February 2021</u>	IMC	IFC	
795—2016	Commercial-Industrial Gas Heating Equipment <u>with revisions through 2020</u>	IFGC	IRC®	
80—2007	Steel Tanks for Oil-burner Fuels and Other Combustible Liquids— with revisions through January 2014 <u>April 2019</u>	IFC	IRC®	
817—2015	Standard for Cord Sets and Power-supply Cords— with revisions through August 2018 <u>September 2021</u>	IFC		
834—04	Heating, Water Supply and Power Boilers Electric— with revisions through September 2018 <u>July 2019</u>	IMC		
834—2004	Heating, Water Supply and Power Boilers—Electric— with revisions through September 2018 <u>July 2019</u>	IRC®		
842— 2015 <u>2019</u>	Valves for Flammable Fluids— with revisions through May 2015	IMC	IRC®	
858—2014	Household Electric Ranges— with revisions through June 2018 <u>September 2019</u>	IMC	IRC®	
864—2014	Control Units and Accessories for Fire Alarm Systems— with Revisions through March 2018 <u>May 2020</u>	IMC	IBC	IFC
867—2011	Electrostatic Air Cleaners— with revisions through August 2018 <u>2021</u>	IMC		
875—09	Electric Dry-bath Heaters— with revisions through September 2017 <u>January 2021</u>	IRC®		

87A—2015	Power-operated Dispensing Devices for Gasoline and Gasoline/Ethanol Blends with Nominal Ethanol Concentrations up to 85 Percent—with revisions through June 2017 <u>September 2019</u>	IFC		
923—2013	Microwave Cooking Appliances—with revisions through July 2017 <u>August 2020</u>	IMC	IRC®	
924—2016	<u>Standard for Safety Emergency Lighting and Power Equipment—with Revisions through May 2018</u> <u>2020</u>	IBC	IFC	
9540A— 2017 <u>2019</u>	Standard for Safety Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems	IFC		
9540— 2016 <u>2020</u>	Energy Storage Systems and Equipment - <u>with revisions through April 2021</u>	IFC	IRC®	
959—2010	Medium Heat Appliance Factory-built Chimneys—with Revisions through June 2014 <u>August 2019</u>	IFGC	IMC	IRC®
9—2009	Fire Tests of Window Assemblies—with Revisions through February 2015 <u>March 2020</u>	IBC		
UL/CSA 60335-2-40— 17 <u>2019</u>	Household and Similar Electrical Appliances—Safety—Part 2- 40 : Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers <u>Motor-Compressors</u>	IMC		
UL/CSA 60335-2-89— 17 <u>21</u>	Household and Similar Electrical Appliances—Safety—Part 2-89: Particular Requirements for Commercial Refrigerating Appliances with an Incorporated or Remote Refrigerant Unit or Compressor	IMC		
WDMA		Window and Door Manufacturers Association		
Standard Reference Number	Title	Referenced in Code(s):		

AAMA/WDMA/CSA 101/I.S.2/A440— 17 <u>22</u>	Specifications for Windows, Doors and Unit Skylights	IBC	IECC®	IRC®
I.S. 11— 16 <u>23</u>	Industry Standard Analytical Method for Design Pressure (DP) Ratings of Fenestration Products	IRC®		
WMA	World Millwork Alliance (formerly Association of Millwork Distributors Standards AMD)			
Standard Reference Number	Title	Referenced in Code(s):		
ANSI WMA 100— 2018 <u>2023</u>	Standard Method of Determining Structural Performance Ratings of Side-Hinged Exterior Door Systems and Procedures for Component Substitution	IRC®		

Reason: The CP28 Code Development Policy, Section 4.6 requires the updating of referenced standards to be accomplished administratively, and be processed as a Code Change Proposal for consideration by the Administrative Code Change Committee. In September 2021, a letter was sent to each developer of standards that is referenced in the International Codes, asking them to provide ICC with a list of their standards in order to update to the current edition. Listed are the referenced standards that are to be updated based upon responses received from standard developers.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Not applicable.

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Existing Building

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SP11185		/S125-22 Part II			
Date Submitted	03/15/2024	Section	109.3.10	Proponent	Mo Madani
Chapter	1	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Overlap
Commission Action	Pending Review			Classification	

Comments

General Comments No

Related Modifications

This section is marked reserved in the 2023 FBC-EB.

Summary of Modification

When nonresidential buildings in flood hazard areas are proposed to be dry floodproofed, several aspects of design are critical.

Rationale

See attached

SP11185Text Modification

See attached

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S125-22 Part II

Original Proposal

IEBC: [A] 109.3.10

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Existing Building Code

Revise as follows:

[A] 109.3.10 Flood hazard documentation. Where a building is located in a *flood hazard area*, documentation of the elevation of the lowest floor or the elevation of dry floodproofing, if applicable, as required in the International Building Code or the International Residential Code, as applicable, shall be submitted to the *code official* prior to the final inspection.

Reason: When nonresidential buildings in flood hazard areas are proposed to be dry floodproofed, several aspects of design are critical, including the strength of walls and flood shields that are designed to be watertight (addressed in 1612.4 #1.3) and the required elevation of the dry floodproofing, which is specified in ASCE 24 Chapter 6.

The proposed change follows the pattern already established for documentation of lowest floor elevations prior to the final inspection. Because dry floodproofed buildings do not have elevated "lowest floors," rather than survey floors, this change clarifies the elevation to which dry floodproofed buildings are protected is to be documented. Having this elevation determined and documented helps local officials confirm compliance with the design requirements. The NFIP regulations require communities to obtain the elevation to which structures are floodproofed [44 Code of Federal Regulations Sec. 60.3(b)(5)(ii)].

FEMA's Mitigation Assessment Team reports prepared after some significant flood events document failures of dry floodproofing systems. Some failures are caused by floodwater rising higher than the protective measures, which indicates the value of documenting that construction of those measures does meet the requirements for compliance.

Many communities require permittees to use the FEMA Floodproofing Certificate for Non-Residential Structures (FEMA Form 086-0-34). That form is prepared for use to certify designs as part of documentation submitted with permit applications, as well as for use to certify the "floodproofed elevation." The form also is used when certification of as-built conditions is required, including the elevation to which the building is dry floodproofed. The FEMA National Flood Insurance Program requires as-built certification as part of qualifying for NFIP flood insurance policy coverage for dry floodproofed nonresidential buildings.

Bibliography: FEMA Form 086-0-34, FEMA Floodproofing Certificate for Non-Residential Structures: <https://www.fema.gov/media-library/assets/documents/2748>

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal clarifies that the elevation to which dry floodproofed buildings are protected is to be documented, rather than documentation of the "lowest floors." There is no change in cost because the cost to survey the elevation to which a building is dry floodproofed would be equal to the cost to survey a floor elevation relative to datum. Completion of the survey portion of the FEMA Nonresidential Floodproofing Certificate requires fewer inputs by the professional certifying the survey than are required to complete a FEMA Elevation Certificate.

Public Hearing Results

Committee Action

As Submitted

THIS CODE CHANGE WAS HEARD BY THE ADMINISTRATIVE COMMITTEE.

SP11185Text Modification

Committee Reason: The committee stated that the reason for approval was that this language is absolutely needed in dry floodproofing cases where buildings are elevated to get this certification. (Vote: 13-0)

Final Hearing Results

S125-22 Part II

AS

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Mod_11185_Text_S125-22 Part II.pdf

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Existing Building

SP10705		/EB50-22		14	
Date Submitted	03/04/2024	Section	502.3	Proponent	Mo Madani
Chapter	5	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

This modification is already part of the 2023 FBC - EB. It is not needed.

Summary of Modification

This proposal includes requirements for alterations and additions (improvements) to existing buildings in flood hazard areas

Rationale

See attached

SP10705Text Modification

See attached

Page: 1

Mod10705_ TextOfModification.pdf

EB50-22

Original Proposal

IEBC: SECTION 202 (New), [BS] 502.3, [BS] 1103.3, [BS] 1301.3.3

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Existing Building Code

Add new definition as follows:

LOWEST FLOOR. The lowest floor of the lowest enclosed area, including basement, but excluding any unfinished or flood-resistant enclosure, usable solely for vehicle parking, building access or limited storage provided that such enclosure is not built so as to render the structure in violation of Section 1612 of the International Building Code or Section R322 of the International Residential Code, as applicable.

Revise as follows:

[BS] 502.3 Flood hazard areas. For buildings and structures in *flood hazard* areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any *addition* that constitutes *substantial improvement* of the *existing structure* shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any *additions* that do not constitute *substantial improvement* of the *existing structure* are not required to comply with the flood design requirements for new construction provided that both of the following apply:

1. The addition shall not create or extend a nonconformity of the existing building or structure with the flood resistant construction requirements than the existing building or structure was prior to the addition
2. The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or structure or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

[BS] 1103.3 Flood hazard areas. *Additions and foundations in flood hazard areas* shall comply with the following requirements:

1. For horizontal *additions* that are structurally interconnected to the *existing building*:
 - 1.1. If the *addition* and all other proposed work, when combined, constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
 - 1.2. If the *addition* constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
 - 1.3. If the addition does not constitute substantial improvement the existing structure is not required to comply with the flood design requirements for new construction provided that both of the following apply.
 - 1.3.1. The addition shall not create or extend any nonconformity of the existing building with the flood resistant construction requirements.
 - 1.3.2. The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
2. For horizontal *additions* that are not structurally interconnected to the *existing building*:
 - 2.1. The *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
 - 2.2. If the *addition* and all other proposed work, when combined, constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
3. For vertical *additions* and all other proposed work that, when combined, constitutes *substantial improvement*, the *existing building* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
4. For a raised or extended foundation, if the foundation work and all other proposed work, when combined, constitutes *substantial improvement*, the *existing building* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
5. For a new foundation or replacement foundation, the foundation shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.

[BS] 1301.3.3 Compliance with flood hazard provisions. In *flood hazard areas*, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable, if the work covered by this section constitutes *substantial improvement*. If the work covered by this section is a structurally connected horizontal addition that does not constitute substantial improvement, the building is not required to comply with the flood design requirements for new construction provided that both of the following apply.

1. The addition shall not create or extend any nonconformity of the existing building with the flood resistant construction requirements.
2. The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Reason: The IEBC, like the National Flood Insurance Program (NFIP), includes requirements for alterations and additions (improvements) to existing buildings in flood hazard areas. The trigger for compliance is in the definition for "substantial improvement." The definition for "substantial damage" specifies the trigger when floodplain buildings are damaged. The trigger is sometimes referred to as the "50% rule" because compliance is required when the cost of proposed improvements or required repairs equals or exceeds 50 percent of the market value of the existing building before the work is done or before damage occurred. FEMA guidance, like IEBC Section 1103.3, distinguishes compliance of additions from compliance of the existing (or base) building.

The IEBC Sec. 502.1 already states that alterations must be made to ensure the existing buildings together with an addition, is "not less complying with" the requirements of the code than the existing building was before the addition. IBC Sec. 1101.2 echoes that limitation, by stating that an addition "shall not create or extend any nonconformity." Buildings in flood hazard areas that were built before communities adopted regulations usually are nonconforming. Therefore, the basic premise that additions must not make nonconforming buildings more

nonconforming includes consideration of the flood resistant requirements of the IBC and IRC.

The proposed amendments reinforce what is already a requirement of the code. The amendments make it clear that additions, even if not substantial improvement (i.e., cost less than 50% of the market value), must not make a nonconforming building more nonconforming. The way to ensure this is to have specific requirements for "non-substantial" additions stating those additions must not be lower than the lowest floors of the existing buildings because being lower would render the buildings more nonconforming. Similarly, non-substantial additions to conforming (or compliant) buildings must not make those buildings nonconforming. The proposal accounts for additions to buildings that are elevated higher than the requirements of the code by specifying additions to those buildings must be at least as high as the elevations required in IBC Section 1612 or IRC Section R322, as applicable.

Another scenario that is addressed by this proposal is when owners of buildings elevated on columns or pilings decide to enclose the area under the elevated buildings. Enclosing an area meets the definition of addition because it creates an "extension or increase in floor area." Even when enclosing the area underneath is not a "substantial improvement" based on cost, the work is only allowed when the walls and the use of the proposed enclosure comply with the requirements for enclosures. Otherwise, the enclosure would either create noncompliance or extend nonconformance.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal clarifies the application of the existing IEBC requirement that work on an existing building must not make a nonconforming building more nonconforming. The proposal is consistent with the existing requirement that additions must not create or extend any nonconformity. There is no change to the technical content of the provisions. By clarifying the existing requirement as it applies to additions to buildings in flood hazard areas, there will be no cost impact when approving this proposal.

Public Hearing Results

Committee Action

As Modified

THIS CODE CHANGE WAS HEARD BY THE IBC-STRUCTURAL COMMITTEE.

Committee Modification:

[BS]1103.3 Flood hazard areas. *Additions and foundations in flood hazard areas* shall comply with the following requirements:

1. For horizontal *additions* that are structurally interconnected to the *existing building*:
 - 1.1. If the *addition* and all other proposed work, when combined, constitute *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
 - 1.2. If the *addition* constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
 - 1.3. If the addition does not constitute substantial improvement the ~~existing structure~~ *addition* is not required to comply with the flood design requirements for new construction provided that both of the following apply.
 - 1.3.1 The addition shall not create or extend any nonconformity of the existing building with the flood resistant construction requirements.
 - 1.3.2 The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or the lowest floor elevation required in Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.

2. For horizontal *additions* that are not structurally interconnected to the *existing building*:
 - 2.1. The *addition* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
 - 2.2. If the *addition* and all other proposed work, when combined, constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
3. For vertical *additions* and all other proposed work that, when combined, constitutes *substantial improvement*, the *existing building* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
4. For a raised or extended foundation, if the foundation work and all other proposed work, when combined, constitutes *substantial improvement*, the *existing building* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
5. For a new foundation or replacement foundation, the foundation shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

[BS]1301.3.3 Compliance with flood hazard provisions. In *flood hazard areas*, buildings that are evaluated in accordance with this section shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable, if the work covered by this section constitutes *substantial improvement*. If the work covered by this section is a structurally connected horizontal addition that does not constitute substantial improvement, the building addition is not required to comply with the flood design requirements for new construction provided that both of the following apply.

1. The addition shall not create or extend any nonconformity of the existing building with the flood resistant construction requirements.
2. The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Committee Reason: Approved as modified as the term 'addition' is preferred and as per the provided reason statement. The modification clarifies that 'addition' is the preferred term. (Vote: 13-1)

Public Comments

Public Comment 1

Proponents: Jonathan Siu, Jon Siu Consulting, LLC, Self (jonsiuconsulting@gmail.com) requests As Modified by Public Comment

Further modify as follows:

2021 International Existing Building Code

[BS] 502.3 Flood hazard areas. For buildings and structures in *flood hazard areas* established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any *addition* that constitutes *substantial improvement* of the *existing structure* shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any *additions* that do not constitute *substantial improvement* of the *existing structure* are not

required to comply with the flood design requirements for new construction provided that both of the following apply:

1. The addition shall not create or extend a nonconformity of the existing building or structure with the flood resistant construction requirements ~~than the existing building or structure was prior to the addition~~
2. The lowest floor of the addition shall be at or above the lower of the lowest floor of the existing building or structure or the lowest floor elevation required in Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Commenter's Reason: This public comment is being submitted to clarify the proposal. As approved by the committee, the language of this item is convoluted and confusing. The same concept is expressed much more succinctly and clearly in Section 1103.3, Item 1.3.1 in this same proposal. I pointed this out to the proponents at the Committee Action Hearings.

This public comment deletes the confusing language, which then makes this item identical to the parallel requirement in Section 1103.3, Item 1.3.1.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction. The cost impact statement for the original proposal says there will be no cost impact in approving the proposal. This public comment just clarifies the proposal, so it will have no effect on the original cost impact statement.

Final Hearing Results

EB50-22

AMPC1

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Existing Building

15

SP10706		/EB51-22		15	
Date Submitted	03/04/2024	Section	502.3	Proponent	Mo Madani
Chapter	5	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of this modification is not consistent with that of the 2023 FBC- EB.

Summary of Modification

Adds requirements to raised foundations for flood requirements

Rationale

See attached

SP10706 Text Modification

See attached

EB51-22

Original Proposal

IEBC: [BS] 502.3, [BS] 1103.3

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Existing Building Code

Revise as follows:

[BS] 502.3 Flood hazard areas. For buildings and structures in *flood hazard areas* established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any *addition* that constitutes *substantial improvement* of the *existing structure* shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design. For new foundations, foundations raised or extended in the vertical, and replacement foundations, the foundations shall be in compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any *additions* that do not constitute *substantial improvement* of the *existing structure* are not required to comply with the flood design requirements for new construction.

[BS] 1103.3 Flood hazard areas. *Additions and foundations in flood hazard areas* shall comply with the following requirements:

1. For horizontal *additions* that are structurally interconnected to the *existing building*:
 - 1.1. If the *addition* and all other proposed work, when combined, constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
 - 1.2. If the *addition* constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
2. For horizontal *additions* that are not structurally interconnected to the *existing building*:
 - 2.1. The *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
 - 2.2. If the *addition* and all other proposed work, when combined, constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
3. For vertical *additions* and all other proposed work that, when combined, constitutes *substantial improvement*, the *existing building* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.
4. ~~For a raised or extended foundation, if the foundation work and all other proposed work, when combined, constitutes substantial improvement, the existing building shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.~~
45. For a new foundation, or replacement foundation, or a foundation raised or extended in the vertical, the foundation shall comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.

Reason: Whether an existing building will have a new foundation, replacement foundation, or a foundation that is raised or extended in the vertical, the construction process is generally the same: the building must be detached from the existing foundation and jacked up to allow the foundation work to proceed. Then, after the foundation work is complete, the building is lowered and structurally attached to the foundation. The costs to detach the building, jack it up, and lower and attach it to the foundation, do not change significantly based on how tall the new foundation will be.

The existing provisions in Section 502.3 and Section 1103.3 allow a building in a flood hazard area to remain below the required elevation (and possibly on an incompatible foundation type) if the work is determined to not constitute substantial improvement (a defined term). If a foundation is already being raised or extended in the vertical, it should be raised to the same elevation required for new construction in flood hazard areas. The I-Codes define "addition" to include an increase in height, which is why foundation work is included in IEBC Sec. 1103.3 and why the proposed change amends a section in Chapter 5 Additions.

When owners of buildings in flood hazard areas have already decided to invest in this type of extensive work, having the final foundation be resistant to identified flood conditions and flood loads is appropriate to protect that investment, as well as the investment in and safety of the building itself. The incremental cost of adding additional height to a foundation that is already being replaced or raised or extended in the vertical is offset by the benefits of lower risk of flood damage and lower NFIP flood insurance policy premiums which are, in part, a function of elevation.

Cost Impact: The code change proposal will increase the cost of construction

A change in cost would only occur for buildings in flood hazard areas that are already having their foundations raised or extended in the vertical, and then only if those foundations need to be higher to meet the elevations specified in ASCE 24 (which requires at least base flood elevation plus one foot). The code change proposal requires foundations that are raised or extended in the vertical to comply with flood resistant requirements, regardless of whether the cost of the work triggers the substantial improvement requirement. This type of project involves extensive work, with the majority of costs associated with the work elements other than the foundation construction. Because an owner proposing to raise, extend, or replace a foundation is already willing to incur those costs for foundations at lower heights, any additional costs are only those for added height to reach the elevation required by the Code. The per-foot cost of additional height is a function of the additional height and of the type of foundation, which typically are columns or perimeter walls.

FEMA manages a number of mitigation grant programs that fund elevation-in-place projects in flood hazard areas. Using cost sheets for two FEMA funded projects to elevate homes on concrete columns and CMU skirting (one smaller footprint but higher elevation, the other larger footprint but lower elevation), the foundation-only costs per additional foot of height average 2.3% of the total elevation projects. In a 2018 review of the per-foot cost for adding height to the foundation of a 2000 square foot light framed construction building (dwelling), FEMA estimated the cost per additional foot was \$2144 (concrete perimeter wall with interior piers) and \$1,850 (CMU perimeter wall with interior piers).

Offsetting benefits of having raised or extended foundations fully comply include long-term damage avoided. Also, flood insurance policies written by the National Flood Insurance Program may be reduced because the rating is based, in part, on the elevation of the top of the lowest floor.

Public Hearing Results

Committee Action

As Modified

THIS CODE CHANGE WAS HEARD BY THE IBC-STRUCTURAL COMMITTEE.

Committee Modification:

2021 International Existing Building Code

[BS]502.3 Flood hazard areas. For buildings and structures in *flood hazard* areas established in Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, any *addition* that constitutes *substantial improvement* of the *existing structure* shall comply with the flood design requirements for new construction, and all aspects of the *existing structure* shall be brought into compliance with the requirements for new construction for flood design. For new foundations, foundations raised or extended upward in the vertical, and replacement foundations, the foundations shall be in compliance with the requirements for new construction for flood design.

For buildings and structures in *flood hazard areas* established in Section 1612.3 of the International Building Code, or Section R322 of the

International Residential Code, as applicable, any *additions* that do not constitute *substantial improvement* of the *existing structure* are not required to comply with the flood design requirements for new construction.

[BS]1103.3 Flood hazard areas. *Additions and foundations in flood hazard areas* shall comply with the following requirements:

1. For horizontal *additions* that are structurally interconnected to the *existing building*:
 - 1.1. If the *addition* and all other proposed work, when combined, constitute *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the *International Building Code*, or Section R322 of the International Residential Code, as applicable.
 - 1.2. If the *addition* constitutes *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
2. For horizontal *additions* that are not structurally interconnected to the *existing building*:
 - 2.1. The *addition* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
 - 2.2. If the *addition* and all other proposed work, when combined, constitute *substantial improvement*, the *existing building* and the *addition* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
3. For vertical *additions* and all other proposed work that, when combined, constitute *substantial improvement*, the *existing building* shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.
4. For a new foundation, replacement foundation, or a foundation raised or extended ~~upward in the vertical~~, the foundation shall comply with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable.

Committee Reason: Approved as modified as this clarifies the intent for 'extended upward' and as per the provided reason statement. The modification clarifies the intent with the use of the term "upward" versus "in the vertical." (Vote: 14-0)

Final Hearing Results

EB51-22

AM

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Existing Building

16

SP10762		/EB104-22			
Date Submitted	03/04/2024	Section	1201.2	Proponent	Mo Madani
Chapter	12	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

simplifies and improves the language in Section 1201.2 by providing a direct pointer to Section 115 and eliminating vague and unenforceable language

Rationale

See attached

SP10762 Text Modification

See attached

Page: 1

Mod10762_ TextOfModification.pdf

EB104-22

Original Proposal

IEBC: [BS] 1201.2

Proponents: Gwennyth R. Searer, Wiss, Janney, Elstner Associates, Inc., myself (gsearer@wje.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Existing Building Code

Revise as follows:

[BS] 1201.2 Report. ~~A historic building or structure undergoing alteration or change of occupancy shall be investigated and evaluated, and, if it is intended that the building meet the requirements of this chapter, a written report shall be prepared and filed with the code official by a registered design professional where such a report is necessary in the opinion of required by the code official. Such The report shall be in accordance with Chapter 1 and shall identify all unsafe conditions as defined in Section 115 each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a description of structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be included prepared. Additionally, the report shall describe the components of the building or structure that provide a level of safety substantially below that required of existing non-historic buildings and structures. each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.~~

Reason: The provisions in Section 1201.2 that govern the investigation, evaluation, and report are unclear at best. The Commentary is similarly vague and provides no substantive guidance regarding the intent of this provision. The section contains a general reference to Chapter 1 (i.e., "in accordance with Chapter 1), but the only provisions in Chapter 1 that refer to such a report are in Section 115, which deals with unsafe conditions. Section 115 does not deal with "required safety features that are in compliance with this chapter" (whether the phrase "this chapter" refers to Chapter 1 or Chapter 12 is also unclear) and does not deal with "compliance with other chapters of these provisions".

It makes little sense to refer the user generally to Chapter 1 regarding a report if the only mention of a such a report in Chapter 1 is in Section 115, so a more direct pointer is proposed.

Further, the term "required safety feature" is undefined and unclear, and a vague requirement to assess compliance with all of the chapters makes little sense, when only alterations and changes of occupancy are covered by Section 1201.2.

The requirement to "describe each feature that is not in compliance with these provisions and demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety" is also unclear and largely unenforceable.

This proposal simplifies and improves the language in Section 1201.2 by providing a direct pointer to Section 115 and eliminating vague and unenforceable language. If this proposal is accepted, the section will read as follows:

A historic building or structure undergoing alteration or change of occupancy shall be investigated and evaluated, and a written report shall be prepared and filed with the code official by a registered design professional where required by the code official. The report shall identify all unsafe conditions as defined in Section 115. For buildings assigned to Seismic Design Category D, E or F, a description of the vertical and horizontal elements of the lateral force-resisting system and strengths or weaknesses therein shall be included. Additionally, the report shall describe the components of the building or structure that provide a level of safety substantially below that required of existing non-historic buildings and structures.

While I would prefer to be able to say that this revised language matches the intent of the existing provision, I honestly cannot say that because the existing provision is extremely vague and unclear. What I can say is that this revised language is both reasonable and fair; it addresses unsafe conditions; and if an assessment of the level of safety provided by existing components must be provided, it requires

comparison to that required of existing buildings (as opposed to that required of new buildings).

Cost Impact: The code change proposal will not increase or decrease the cost of construction

It is impossible to tell for sure whether this proposal will result in an increase or a decrease in the cost of construction because the existing language is so vague. Streamlining the provision and making it enforceable will arguably reduce the amount of time spent trying to intuit the meaning of the section, so that should reduce costs. Making the provision clear and enforceable may result in increased enforcement, so that could arguably increase the cost of construction.

In any event, the total change in the cost of construction is likely negligible as this provision only applies to alterations and changes of occupancy in historic buildings, and, even then, only where required by the building official. It's a very small subset of projects in a small subset of buildings.

Public Hearing Results

Committee Action

As Modified

THIS CODE CHANGE WAS HEARD BY THE IBC-STRUCTURAL COMMITTEE.

Committee Modification:

[BS]1201.2 Report. A *historic building or structure* undergoing *alteration or change of occupancy* shall be investigated and evaluated, and a written report shall be prepared and filed with the *code official* by a *registered design professional* where required by the *code official*. The report shall identify all unsafe conditions as defined in Section 115. For buildings assigned to Seismic Design Category D, E or F, a description of the vertical and horizontal elements of the lateral force-resisting system and strengths or weaknesses therein shall be included. Additionally, the report shall describe the components of the building ~~or structure~~ that provide a level of safety substantially below that required of existing non-historic buildings ~~and structures~~.

Committee Reason: Approved as modified as the revised wording adds needed clarity and direction. The modification removes redundant wording as "structure" is already included in the definition of historic buildings. (Vote: 12-2)

Final Hearing Results

EB104-22

AM

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Existing Building

SP10763		/EB105-22		17	
Date Submitted	03/04/2024	Section	1201.2	Proponent	Mo Madani
Chapter	12	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Overlap
Commission Action	Pending Review			Classification	

Comments

General Comments No

Related Modifications

Original text of the proposed code change is not consistent with that of the 2023 FBC -EB.

Summary of Modification

Addresses requirement for a report for Level 1 alteration

Rationale

See attached

SP10763 Text Modification

See attached

Page: 1

Mod10763_ TextOfModification.pdf

EB105-22

Original Proposal

IEBC: [BS] 1201.2

Proponents: Gwenyth R. Searer, Wiss, Janney, Elstner Associates, Inc., myself (gsearer@wje.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Existing Building Code

Revise as follows:

[BS] 1201.2 Report. A historic building undergoing alteration or change of occupancy shall be investigated and evaluated. If it is intended that the building meet the requirements of this chapter, a written report shall be prepared and filed with the *code official* by a *registered design professional* where such a report is necessary in the opinion of the *code official*. Such report shall be in accordance with Chapter 1 and shall identify each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be prepared. Additionally, the report shall describe each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.

Exception: An investigation, evaluation, and report shall not be required where the alteration is scoped by Section 602 as a Level 1 alteration and does not make the building or structure less complying with the provisions of the *International Building Code*.

Reason: The requirements for a report for historic structures are not particularly clear. What is a "required safety feature" and where are these defined? What are "other chapters of these provisions" and why would it be necessary to comply with all of them when only a Level 1 alteration is being proposed?

Further, and more importantly, there is no need for a report for a historic building or structure for a minor alteration that will not make the building or structure less complying with the building code than it was prior to the alteration. These are historic buildings, and typically they do not meet the requirements of the code for new construction. Itemization of all the ways that a building does not meet the current code for new construction and figuring out all the ways to upgrade the building or structure and then determining whether such upgrades would damage the contributing historic features can be a fairly onerous task.

According to the IEBC, Level 1 alterations include such minor things as replacement of roofing or like-for-like replacement of a piece of broken equipment. For historic buildings and structures that have necessarily existed for many decades or even several centuries, any Level 1 alteration that does not make the building less compliant with current code is not changing the status quo and should not trigger a costly report with all of these requirements.

This proposal makes it clear that Level 1 alterations that do not make the building or structure less compliant do not trigger the need for a report. Alterations more extensive than Level 1, alterations that would make the building less compliant with respect to code, and changes of occupancy would still be covered by this section. But Level 1 alterations that do not make any noncompliances with the current code for new construction worse should be exempted from this requirement.

Note that Building Officials still retain the authority to order remedy of dangerous conditions per Section 1205.2, order inspections per Section 109.2, order abatement of unsafe conditions per Section 115, and order emergency measures per Section 116. This proposal will not alter those powers.

Cost Impact: The code change proposal will decrease the cost of construction

This proposal relaxes the requirements for a report for historic buildings and structures that are undergoing Level 1 alterations that do not make the building less compliant with the building code for new construction. As a report to determine all the ways that an existing historic building or structure does not meet the current building code for new construction can be a fairly onerous task, exemption of the requirement for a report will reduce the cost of these minor alterations where the alterations do no harm and do not make any

noncompliances worse.

Public Hearing Results

Committee Action

As Submitted

THIS CODE CHANGE WAS HEARD BY THE IBC-STRUCTURAL COMMITTEE.

Committee Reason: Approved as submitted as the proposal adds a needed exception for historic buildings relative to an alteration scoped by Section 602 as a Level 1 alteration. (Vote: 14-0)

Final Hearing Results

EB105-22

AS

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Existing Building

SP10766		/EB110-22		18	
Date Submitted	03/04/2024	Section	1203.3	Proponent	Mo Madani
Chapter	12	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	
Commission Action	Pending Review			Classification	Overlap

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC -EB.

Summary of Modification

Editorial change to address clarity of section

Rationale

See attached

SP10766Text Modification

See attached

Page: 1

Mod10766_TextOfModification.pdf

EB110-22

Original Proposal

IEBC: 1203.3

Proponents: Mike Nugent, Chair, Building Code Action Committee (bcac@iccsafe.org)

2021 International Existing Building Code

Revise as follows:

1203.3 Means of egress. Existing door openings and corridor and stairway widths less than those specified elsewhere in this code may be ~~approved, provided that,~~ Where in the opinion of the *code official*, there is sufficient width and height for a person to pass through the opening or traverse the means of egress, existing door openings and corridor and stairway widths are not required to meet the widths required by the *International Building Code* or this code. Where *approved* by the *code official*, the front or main exit doors need not swing in the direction of the path of exit travel, provided that other *approved* means of egress having sufficient capacity to serve the total occupant load are provided.

Reason: There was change EB111-19 that had an editorial correction. This addresses non mandatory language and also addresses the fact that this is likely intending to refer also to the IBC. This proposal also addresses the grammar concern that caused this proposal to disapproved last cycle.

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 2020 and 2021 the BCAC has held several virtual meetings open to any interested party. In addition, there were numerous virtual Working Group meetings for the current code development cycle, which included members of the committee as well as interested parties. Related documents and reports are posted on the BCAC website at <https://www.iccsafe.org/products-and-services/i-codes/code-development/cs/building-code-action-committee-bcac/>.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

This proposal is merely provided to appropriately revise the language to be more mandatory and clearly provide the correct reference to the IBC as intended. This was a follow-up to a similar proposal EB111-19 and is not intended to change the intent of the section to allow reduced door widths in historic buildings therefore the cost of compliance will not change.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: This proposal was approved based upon the proponents reason statement. (Vote: 14-0)

Final Hearing Results

EB110-22

AS

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Existing Building

SP10767		/EB113-22		19	
Date Submitted	03/04/2024	Section	1205.1	Proponent	Mo Madani
Chapter	12	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Overlap
Commission Action	Pending Review			Classification	

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC -EB.

Summary of Modification

refers users to Section 405.2.1 for nearly all repairs, regardless of the level of damage

Rationale

See attached

SP10767 Text Modification

See attached

Page: 1

Mod10767_TextOfModification.pdf

EB113-22

Original Proposal

IEBC: [BS] 1205.1

Proponents: Gwenyth R. Searer, Wiss, Janney, Elstner Associates, Inc., myself (gsearer@wje.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Existing Building Code

Revise as follows:

[BS] 1205.1 **General.** *Historic buildings* shall comply with the applicable structural provisions for the work as classified in Chapter 4 or 5.

Exceptions:

1. The *code official* shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.
2. ~~Repair of substantial structural damage is not required to comply with Sections 405.2.3 and 405.2.4. Substantial structural damage shall be repaired in accordance with Section 405.2.1. Regardless of the level of damage, repairs need only comply with Section 405.2.1. Repairs need not comply with Section 405.2.1.1 or Sections 405.2.2 through 405.2.6.~~

Reason: During the development of the 2018 IEBC, proposal EB41-16 was modified by public comment to further clarify that historic buildings are exempt from the then-existing structural upgrade triggers in Chapter 4 that apply to non-historic buildings. The public comment was accepted at the public comment hearings, and was then approved by the voting membership of the ICC. However, at the same time that the proposal to clarify that historic buildings are exempted from the then-existing structural upgrade triggers, two new triggers -- the disproportionate earthquake damage trigger (now Section 405.2.2) and the snow-load damage trigger (now Section 405.2.5 and Section 405.2.1.1) -- were added to the IEBC, thus unintentionally contravening both the intent of the IEBC and that of the voting membership with respect to historic buildings. This proposal corrects that oversight by simplifying the entire section, referring users to Section 405.2.1 for nearly all repairs, regardless of the level of damage.

As was discussed during the public comment hearing (and even in the committee action hearing prior to that), the intent is to make repair of historic buildings as least onerous as possible. Exemption of historic buildings from upgrade triggers had been in the code for several code cycles; however, the 2018 IEBC made it more clear, except for these two new upgrade triggers. This proposal brings the Exceptions portion of 1205.1 into alignment with the other exceptions and removes an unintended conflict. Note that building officials still retain the ability to order remedy of dangerous conditions; the intent of this proposal (and the prior proposals that came before) is to prevent upgrade triggers from mandating structural interventions that end up destroying the character-defining features of the structures that this chapter is intended to preserve.

This proposal does one other thing: it also exempts qualified historic structures from the flood hazard upgrade trigger associated with substantial damage. This is for the same reason that the historic structures are exempted from the other upgrade triggers -- namely that mandatory upgrade triggers often result in the removal or destruction of the character-defining features that make the structure historic. In editions of the IEBC prior to 2018, Chapter 12 contained fairly clear exceptions to any upgrades; however, it also contained a circular reference to the requirements in then-Chapter 5, which garbled the message. The changes in the 2018 IEBC removed much of the circular references and made the exceptions clear, except that the flood load trigger was NOT excepted. Whether this was by accident or on purpose is not clear; however, the same logic that necessitates the exemption of the other upgrade triggers also necessitates exemption of the flood load trigger for historic structures.

By addressing all of the structural upgrade triggers in a single exception, the intent of Chapter 12 with respect to upgrade triggers is made both clear and streamlined.

Note that a separate proposal by this author attempts to match the existing language in Exception 2; however, that language becomes clunky when all of the various upgrade triggers have to be specifically mentioned. If this proposal is accepted (which is the preferred

solution), the other proposal becomes moot and will be withdrawn.

Cost Impact: The code change proposal will decrease the cost of construction

Because this proposal makes the existing exception to the upgrade triggers broader, this proposal has the potential to decrease the cost of construction for the repairs of historic buildings that experience disproportionate earthquake damage or damage from snow-load-related effects, or that might otherwise trigger flood upgrades as a result of substantial damage. The costs associated with repairs to historic buildings that do not experience disproportionate earthquake damage or snow-load-related damage or *substantial damage* will remain unchanged, as will the cost to repair non-historic buildings.

Public Hearing Results

Committee Action

As Modified

THIS CODE CHANGE WAS HEARD BY THE IBC-STRUCTURAL COMMITTEE.

Committee Modification:

[BS]1205.1 General. *Historic buildings* shall comply with the applicable structural provisions for the work as classified in Chapter 4 or 5.

Exceptions:

1. The *code official* shall be authorized to accept existing floors and existing live loads and to approve operational controls that limit the live load on any floor.
2. Regardless of the level of damage, structural repairs shall be permitted to return the building to its pre-damage condition without additional work. ~~repairs need only comply with Section 405.2.1. Repairs need not comply with Section 405.2.1.1 or Sections 405.2.2 through 405.2.6.~~

Committee Reason: Approved as modified as this simplifies and streamlines the code process and clarifies the intent for historic buildings that simply repairing a building to its pre-damage condition is appropriate. The modification provides more direct wording to clarify the intent in place of the reference to language in Chapter 4. (Vote:14-0)

Final Hearing Results

EB113-22

AM

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Existing Building

SP10768		/EB114-22		20	
Date Submitted	03/04/2024	Section	1205.1	Proponent	Mo Madani
Chapter	12	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Overlap
Commission Action	Pending Review			Classification	

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC -EB.

Summary of Modification

Editorial change for clarity

Rationale

See attached

SP10768 Text Modification

See attached

Page: 1

Mod10768_TextOfModification.pdf

EB114-22

Original Proposal

IEBC: [BS] 1205.1

Proponents: Gwenyth R. Searer, Wiss, Janney, Elstner Associates, Inc., myself (gsearer@wje.com)

THIS CODE CHANGE WILL BE HEARD BY THE IBC-STRUCTURAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THAT COMMITTEE.

2021 International Existing Building Code

Revise as follows:

[BS] 1205.1 General. *Historic buildings* shall comply with the applicable structural provisions for the work as classified in Chapter 4 or 5.

Exceptions:

1. The *code official* shall be authorized to accept existing floors and roof framing and existing previously approved live loads and to approve operational controls that limit the live load on any floor or roof.
2. *Repair of substantial structural damage* is not required to comply with Sections 405.2.3 and 405.2.4. *Substantial structural damage* shall be repaired in accordance with Section 405.2.1.

Reason: This is a largely editorial change, though it does expressly authorize actions by the code official that have previously been understood to be permitted but were not explicitly mentioned.

The current provision mentions "existing live load", which could be misinterpreted as the live load that is currently present on a given floor, but the intent is to allow the previously approved design live load to be continued, even if it is less than the design live load required for new construction. Further, the current provision does not discuss roofs, which in many historic buildings were not designed for the roof design live loads currently required for new construction. In these cases, it may make sense to create operational controls for maintenance and reroofing activities. For example, operational controls could consist of limiting the number of workers on the roof or limiting the amounts of debris and construction materials that are permitted to be placed on the roof structure during maintenance and reroofing activities. The intent is to permit the code official to allow activities that have historically been permitted, and to allow reasonable operational controls that will enable a historic structure to remain in service without requiring upgrades that may either destroy the character-defining features of the historic structure or that may make maintenance and use of a historic structure cost prohibitive and eventually result in a loss of that historic resource.

Cost Impact: The code change proposal will decrease the cost of construction

Although this proposal is intended largely as an editorial change to clarify that the Building Official has the ability to accept previously approved live loads, it also specifically allows the Building Official to accept operational controls for roofs in addition to interior spaces. Consequently, although this change is in the spirit of the original intent, the proposal specifically allows more leeway and judgment on the part of the Building Official with respect to allowing continued use of historic structures, and thus has at least some potential to reduce the cost of repairs and maintenance of these structures.

Public Hearing Results

Committee Action

As Submitted

THIS CODE CHANGE WAS HEARD BY THE IBC-STRUCTURAL COMMITTEE.

Committee Reason: Approved as submitted as this proposal provides clarity relative to the exceptions for roof framing of historic building similar to that allowed for existing floors.. (Vote: 14-0)

Public Comments

Public Comment 1

Proponents: Gwenyth R. Searer, Wiss, Janney, Elstner Associates, Inc., myself (gsearer@wje.com) requests As Modified by Public Comment

Modify as follows:

2021 International Existing Building Code

[BS] 1205.1 General. *Historic buildings* shall comply with the applicable structural provisions for the work as classified in Chapter 4 or 5.

Exceptions:

1. The *code official* shall be authorized to accept existing floor and roof framing and previously approved live loads and roof live loads and to approve operational controls that limit the live load ~~on any floor or roof~~ live load.
2. *Repair of substantial structural damage* is not required to comply with Sections 405.2.3 and 405.2.4. *Substantial structural damage* shall be repaired in accordance with Section 405.2.1.

Commenter's Reason: Although the Committee supported this proposal unanimously, one Committee member asked me to consider submitting a public comment to clarify that roof live loads are included in this provision and to make the proposal clearer with respect to both live loads and roof live loads. This public comment is to address the Committee member's concern, making sure that roof live loads are included in the ability to have previously approved loads remain in effect, and to allow operational controls over maintenance and re-roofing activities if desired for historic buildings. This was always the intent of my proposal; this public comment makes it clearer and is in line with the Committee's actions and desires.

Cost Impact: The net effect of the Public Comment and code change proposal will decrease the cost of construction. This proposal allows more flexibility for historic buildings, per the original reason statement. This flexibility will decrease costs for historic buildings. The public comment clarifies that roof live loads are included in the provision, which was always the intent, so the proposal combined with the public comments will still increase flexibility and decrease costs for historic buildings.

Final Hearing Results

EB114-22

AMPC1

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Existing Building

21

SP11671		/EB108-22		21	
Date Submitted	05/14/2024	Section	1203.2	Proponent	Mo Madani
Chapter	12	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC-EB.

Summary of Modification

The intent of this code change proposal is to coordinate terminology between the IBC, IFC and IEBC when referring to “automatic sprinkler system” since this term is used and defined in the International Building Code and International Fire Code

Rationale

See attached

SP11671 Text Modification

See attached

Page: 1

Mod11671_TextOfModification.pdf

EB108-22

Original Proposal

IEBC: 1203.2, 1203.12

Proponents: John Swanson, National Fire Sprinkler Association, NFSA (swanson@nfsa.org)

2021 International Existing Building Code

Revise as follows:

1203.2 General. Every *historic building* that does not conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard as defined herein shall be provided with an *approved* automatic ~~sprinkler fire-extinguishing~~ system as determined appropriate by the *code official*. However, an automatic ~~sprinkler fire-extinguishing~~ system shall not be used to substitute for, or act as an alternative to, the required number of exits from any *facility*.

1203.12 Automatic ~~sprinkler fire-extinguishing~~ systems. Every *historic building* that cannot be made to conform to the construction requirements specified in the *International Building Code* for the occupancy or use and that constitutes a distinct fire hazard shall be deemed to be in compliance if provided with an *approved* automatic ~~sprinkler fire-extinguishing~~ system.

Exception: Where the *code official* approves an alternative life-safety system.

Reason: The intent of this code change proposal is to coordinate terminology between the IBC, IFC and IEBC when referring to "automatic sprinkler system" since this term is used and defined in the International Building Code and International Fire Code. The term "automatic fire-extinguishing system" is typically used for fire protection systems covered in IBC Section 904.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There are no technical changes to this code section. This proposal is being made to correlate across the I-Codes the term "automatic sprinkler system" as intended.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: This proposal was approved as it makes the language consistent across the I-Codes for automatic sprinkler systems.
(Vote: 14-0)

Final Hearing Results

EB108-22

AS

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Residential

22

SP11398		/RB42-22		22	
Date Submitted	03/26/2024	Section	301.2.4	Proponent	Mo Madani
Chapter	3	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

Flood requirement.

Summary of Modification

This proposal makes it clearer that the flood provisions that apply to both new dwellings and substantially improved or substantially damaged dwellings must comply when located in whole or in part in flood hazard areas.

Rationale

See attached

SP11398Text Modification

See attached

Page: 1

Mod11398_TextOfModification.pdf

RB42-22

Original Proposal

IRC: R301.2.4, R322.1

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Revise as follows:

R301.2.4 Floodplain construction. Buildings and structures constructed in whole or in part in flood hazard areas ~~(including A or V Zones)~~ as established in Table R301.2, and substantial improvement and ~~repair~~ of substantial damage of buildings and structures located in whole or in part in flood hazard areas, shall be designed and constructed in accordance with Section R322. Buildings and structures that are located in more than one flood hazard area, including A Zones, Coastal A Zones, and V Zones, shall comply with the provisions associated with the most restrictive flood hazard area. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas, ~~including A or V Zones and Coastal A Zones,~~ as established in Table R301.2, and substantial improvement and ~~repair~~ of substantial damage of buildings and structures located in whole or in part in flood hazard areas, shall be designed and constructed in accordance with the provisions contained in this section. Buildings and structures that are located in more than one flood hazard area, including A Zones, Coastal A Zones, and V Zones, shall comply with the provisions associated with the most restrictive flood hazard area. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

Reason: This proposal makes it clearer that the flood provisions that apply to both new dwellings and substantially improved or substantially damaged dwellings must comply when located in whole or in part in flood hazard areas. It further clarifies what is meant by "located in more than one flood hazard area." The NFIP requires buildings that straddle a boundary between two zones meet the requirements of the more restrictive flood zone. The proposal also results in R301.2.4 and R322.1 using the same phrasing.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. The code change proposal relocates and explains what is meant by "located in more than one flood hazard area." There is no change to the technical content of the provisions. By clarifying existing requirements, there will be no cost impact when approving this proposal.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: This proposal was approved because this provides clarification for requirements for new buildings or substantially improved buildings located within or partially within a flood zone. (Vote: 10-0)

Final Hearing Results

RB42-22

AS

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Residential

SP11470		/RB135-22		23	
Date Submitted	03/27/2024	Section	321.1.1	Proponent	Mo Madani
Chapter	3	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	
Commission Action	Pending Review			Classification	Overlap

Comments

General Comments No

Related Modifications

The proposed code change has the potential of being in conflict with Section R321.4 as mandated by Florida Statutes.

Summary of Modification

Excessive clearances between the car door and the hoistway door on private residence elevators presents a serious hazard to young children and slight built adolescents or adults. Proposal to address concern.

Rationale

See attached

SP11470Text Modification

See attached

Page: 1

Mod11470_TextOfModification.pdf

RB135-22

Original Proposal

IRC: SECTION R321.1.1 (New), R321.1.1.1 (New), R321.1.1.2 (New)

Proponents: Kevin Brinkman, National Elevator Industry, Inc. (klbrinkman@neii.org)

2021 International Residential Code

SECTION R321 ELEVATORS AND PLATFORM LIFTS

R321.1 Elevators. Where provided, passenger elevators, limited-use and limited-application elevators or private residence elevators shall comply with ASME A17.1/CSA B44.

Add new text as follows:

R321.1.1 Private Residence Elevators. The design, construction, and installation of private residence elevators installed within a residential unit or providing access to one individual dwelling unit shall conform to ASME A17.1/CSA B44, Section 5.3.

R321.1.1.1 Hoistway Enclosures. Hoistway enclosures for private residence elevators shall comply with ASME A17.1/CSA B44, Requirement 5.3.1.1.

R321.1.1.2 Hoistway Opening Protection. Hoistway landing doors for private residence elevators shall comply with ASME A17.1/CSA B44, Requirements 5.3.1.8.1 through 5.3.1.8.3.

R321.2 Platform lifts. Where provided, platform lifts shall comply with ASME A18.1.

R321.3 Accessibility. Elevators or platform lifts that are part of an accessible route required by Chapter 11 of the International Building Code, shall comply with ICC A117.1.

Reason: Excessive clearances between the car door and the hoistway door on private residence elevators presents a serious hazard to young children and slight built adolescents or adults. Proper installation of the hoistway landing doors is critical to ensuring the gap between the hoistway door and the car door or gate does not exceed a 4 inch gap. The 4 inch maximum clearance is based on anthropometric data for young children. However, private residence elevators are not inspected by elevator inspectors in most jurisdictions and the few jurisdictions that do inspect them are mostly limited to the installation of new equipment. On the other hand, almost all private residence construction is inspected by construction officials.

The General Contractor typically constructs the hoistway enclosure and installs the hoistway doors on private residence elevators. Ensuring the installation of the hoistway doors to the 0.75 inch requirement, will greatly increase the likelihood that the clearance between the hoistway and car doors will comply with the 4 inch gap. The proposed language increases awareness for the building designers, contractors and building code officials to the need to mitigate this serious hazard, while retaining the actual code requirements in A17.1/B44.

The proposed changes are consistent with similar changes approved for Chapter 30 of the IBC during the Group A hearings.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

There is no additional cost because these requirements are already contained in the A17.1/B44 code referenced in Section 3001.3. This is being added to alert builders to these requirements.

SP11470Text Modification

Public Hearing Results**Committee Action****As Submitted**

Committee Reason: The committee concluded this proposal coordinates with IBC and also provides users of the IRC pointers for application where elevators may be installed. (Vote: 9-1)

Final Hearing Results

RB135-22

AS

Page: 2

Mod_11470_Text_RB135-22.pdf

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Residential

24

SP11471		/RB137-22	
Date Submitted	03/27/2024	Section	322.2.1
Chapter	3	Affects HVHZ	Yes
TAC Recommendation		Proponent	Mo Madani
Commission Action		Attachments	Yes
TAC Recommendation		Staff Classification	Overlap
Commission Action		Staff Classification	Overlap

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC -R. This code change is already part of the 2023 FBC - R.

Summary of Modification

The proposal adds provisions to the elevation requirements of Section R322, Flood-Resistant Construction, specifically to allow wet floodproofed accessory structures and detached garages in flood hazard areas with floors below the required lowest floor elevations

Rationale

See attached

SP11471 Text Modification

See attached

Page: 1

Mod11471_TextOfModification.pdf

RB137-22

Original Proposal

IRC: R322.2.1, R322.3.2

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Revise as follows:

R322.2.1 Elevation requirements.

1. Buildings and structures in flood hazard areas, not including flood hazard areas designated as Coastal A Zones, shall have the lowest floors elevated to or above the base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.
2. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including *basement*) elevated to a height above the highest adjacent *grade* of not less than the depth number specified in feet (mm) on the FIRM plus 1 foot (305 mm), or not less than 3 feet (915 mm) if a depth number is not specified.
3. *Basement* floors that are below *grade* on all sides shall be elevated to or above base flood elevation plus 1 foot (305 mm), or the design flood elevation, whichever is higher.
4. ~~Attached garages and carports~~ *Garage and carport floors* shall comply with one of the following:
 - 4.1. ~~They~~ *The floors* shall be elevated to or above the elevations required in Item 1 or Item 2, as applicable.
 - 4.2. ~~They~~ *The floors* shall be at or above *grade* on not less than one side. ~~Where an attached garage or carport is enclosed by walls, the walls shall have flood openings that comply with Section R322.2.2 and the attached garage or carport shall be used solely for parking, building access or storage.~~
5. *Detached accessory structures and detached garages* shall comply with either of the following:
 - 5.1. *The floors* shall be elevated to or above the elevations required in Item 1 or Item 2, as applicable.
 - 5.2. *The floors are permitted below the elevations required in Item 1 or Item 2, as applicable, provided such detached structures comply with all of the following:*
 - 5.2.1. *Are used solely for parking or storage.*
 - 5.2.2. *Are one story and not larger than 600 square feet (55.75 m²).*
 - 5.2.3. *Are anchored to resist flotation, collapse or lateral movement resulting from design flood loads.*
 - 5.2.4. *Have flood openings that comply with Section R322.2.2.*
 - 5.2.5. *Are constructed of flood damage-resistant materials that comply with Section R322.1.8.*
 - 5.2.6. *Have mechanical, plumbing and electrical systems, if applicable, that comply with Section R322.1.6.*

Exception: Enclosed areas below the elevation required in this section, including *basements* with floors that are not below *grade* on all sides, shall meet the requirements of Section R322.2.2.

R322.3.2 Elevation requirements.

1. Buildings and structures erected within coastal high-hazard areas and Coastal A Zones, shall be elevated so that the bottom of the lowest horizontal structural members supporting the lowest floor, with the exception of piling, pile caps, columns, grade beams and bracing, is elevated to or above the base flood elevation plus 1 foot (305 mm) or the design flood elevation, whichever is higher.

2. Basement floors that are below grade on all sides are prohibited.
3. Attached garages Garages used solely for parking, building access or storage, and carports shall comply with Item 1 or shall be at or above grade on not less than one side and, if enclosed with walls, such walls shall comply with Item 6 7.
4. Detached accessory structures and detached garages shall comply with either of the following:
 - 4.1. The bottom of the lowest horizontal structural member supporting the floors shall be elevated to or above the elevation required in Item 1.
 - 4.2. The floors are permitted below the elevations required in Item 1, provided such detached structures comply with all of the following:
 - 4.2.1. Are used solely for parking or storage.
 - 4.2.2. Are one story and not larger than 100 square feet (9.29 m²).
 - 4.2.3. Are anchored to resist flotation, collapse or lateral movement resulting from design flood loads.
 - 4.2.4. Are constructed of flood damage-resistant materials that comply with Section R322.1.8.
 - 4.2.5. Have mechanical, plumbing and electrical systems, if applicable, that comply with Section R322.1.6.
- 4-5. The use of fill for structural support is prohibited.
- 5-6. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.
- 6-7. Walls and partitions enclosing areas below the elevation required in this section shall meet the requirements of Sections R322.3.5 and R322.3.6.

Reason: The regulations of the National Flood Insurance Program require all structures to be elevated or dry floodproofed (nonresidential only). The regulations do not explicitly address accessory structures and detached garages. FEMA guidance issued in 1993 (NFIP Technical Bulletin 7) states that communities must use variances to authorize non-elevated detached accessory structures that are wet floodproofed. Wet floodproofing measures minimize flood damage by allowing certain areas to flood, relieving hydrostatic loads and using materials resistant to flood damage.

In 2020, FEMA issued a policy and bulletin specifying requirements for communities to issue permits for non-elevated, wet floodproofed accessory structures rather than variances. Notably, the policy and bulletin establish size limits as a function of flood zone. In flood hazard areas identified as Zone A (all zones that start with "A"), the size limit is one-story two car garage (600 sq ft) and in areas identified as Zone V (start with "V"), the size limit is 100 sq ft. Detached accessory structures that are larger than these sizes must fully comply with the elevation or dry floodproofing requirements for buildings in flood hazard areas. Alternatively, communities may consider individual variances for those larger accessory structures (local floodplain management regulations have criteria for considering variances). FEMA expects to reissue Technical Bulletin 7 in early 2022, revised to be consistent with the policy.

The proposal adds provisions to the elevation requirements of Section R322, Flood-Resistant Construction, specifically to allow wet floodproofed accessory structures and detached garages in flood hazard areas with floors below the required lowest floor elevations. The IRC Section 105.2 states that accessory structures smaller than 200 square feet are exempt from permits but must not "be done in any manner in violation" of the code. Therefore, strictly read, accessory structures in flood hazard areas must be fully elevated or dry floodproofed. This proposal provides some relief to full compliance by allowing some accessory structures to be wet floodproofed (based on size). The proposal also modifies the requirements of R322.2.1 and R322.3.2 to apply to attached garages, with no size limits. Note that for floodplain management purposes, enclosures under elevated buildings used solely for parking, storage and building access are enclosures, not garages.

The proposal specifies that detached accessory structures and detached garages are allowed below the elevations required for other structures (or without dry floodproofing in Zone A/AE) if wet floodproofed and:

- In flood hazard areas other than coastal high hazard areas, the structures are one-story and not larger than 600 sq. ft. (approximately a two-car garage). Detached garages and accessory structures larger than the size limit are allowed if elevated and otherwise comply with the requirements or if dry floodproofed (treated as nonresidential), or if communities authorize them by variance. Note that Section R403.1.4.1 does not require footings for "free-standing accessory structures with an area of 600 square feet or less, of light-frame construction" to extend meet the frost protection requirements.

- In coastal high hazard areas (Zone V), the structures are not larger than 100 sq. ft. Note that breakaway walls and flood openings are not required. Detached accessory structures larger than the size limit are allowed if elevated and otherwise comply with the requirements, or if communities authorize them by variance.

Bibliography: The Floodplain Management Agricultural Structures Policy and FEMA P-2140, *Floodplain Management Bulletin: Requirements for Agricultural Structures and Accessory Structures*, are available here: <https://www.fema.gov/media-collection/floodplain-management-requirements-agricultural-and-accessory-structures>

Cost Impact: The code change proposal will decrease the cost of construction

Costs for many detached accessory structures will decrease because they will no longer be required to be elevated or dry floodproofed when they are smaller than the specified limits, and there are cost savings because communities will not be expected to approve non-elevated accessory structures by variance. The code change proposal limits the size of detached accessory structures and detached garages that can be wet floodproofed rather than elevated or dry floodproofed. An increase in costs occurs only when property owners want accessory structures or detached garages in flood hazard areas that are larger than the specified limits because those larger structures must be installed on elevated foundations (or dry floodproofed in Zone A/AE), unless approved by individually considered variances to be wet floodproofed. However, it is reasonable to assume that the larger the size, the more costly would be the losses resulting from flooding. Additional costs for those larger structures to be elevated depend on the type of foundation chosen. In the report "Natural Hazard Mitigation Saves," the National Institute of Building Sciences estimated that for elevating a single-family home, the cost is \$33 per foot of elevation per pile and \$325 per foot of elevation for stairs. Therefore, for a 1152 square foot accessory structure (24 ft by 48 ft) with 15 piles spaced 12 feet on center, the added cost of elevation would be \$820 per foot of elevation. It is reasonable to assume the cost would be less when more typical pier foundation elements and anchoring are used.

Bibliography: Natural Hazard Mitigation Saves (2019), National Institute of Building Sciences. <https://www.nibs.org/projects/natural-hazard-mitigation-saves-2019-report>.

Public Hearing Results

Committee Action

Disapproved

Committee Reason: The committee was in support of the general idea, but felt the issue of the size of the garage did not seem vetted out completely. The 100 square feet seems really low where the IRC doesn't require permits until 200 square feet. (Vote: 10-0)

Public Comments

Public Comment 1

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov) requests As Submitted

Commenter's Reason: Including the proposed requirements in the IRC will mean thousands of communities that participate in the NFIP will conform to the policy and bulletin issued by FEMA regarding wet floodproofed (non-elevated) accessory structures. It is only by FEMA policy that accessory structures smaller than specified sizes are not required to be elevated or dry floodproofed. The size limit is 100 sq ft for detached accessory structures in coastal high hazard areas (Zone V, where wave heights are 3 feet and higher) and Coastal A Zones (wave heights between 3 and 1.5 feet), and the size limit is one-story, 600 sq ft for detached garages and accessory structures in all other flood hazard areas.

The committee questioned the 100 sq ft size limit established by FEMA for Zone V, in part because the IRC doesn't require permits for accessory structures that are less than 200 sq ft. However, even though permits are not required, compliance is required because accessory structures smaller than 200 square feet are exempt from permits must not "be done in any manner in violation" of the code. Including the proposed requirements for accessory structures establishes how accessory structures can be allowed and not violate the code. Without this proposal, 100-sq ft accessory structures in Zone V would have to be fully elevated.

The 100 sq. ft. size limit for Zone V and Coastal A Zone is consistent with FEMA guidance and letters of interpretation issued to

communities since the mid-1980s. The first NFIP Technical Bulletin 5 on the NFIP free-of-obstruction requirements for Zone V was issued in 1993. It stated the following:

"Unless properly elevated on piles or columns in accordance with Section 60.3(e)(4), accessory buildings in V zones must be limited to low-value or small structures such as small metal or wooden sheds that are "disposable." If a low-cost or small building is placed on a site, consideration must be given to the effects the debris from the building will have on the building or adjacent buildings. If the building is of significant size and strength to create either a debris impact or flow diversion problem, it must be elevated in accordance with Section 60.3(e)(4)."

"For purposes of defining and administering the floodplain ordinance, if a community wishes to allow unelevated accessory buildings, the community must establish the meaning of low-cost and small accessory buildings. FEMA recommends that low cost be defined as having a value of less than \$500 and small be defined as less than 100 square feet of floor space. Accessory buildings meeting these criteria must be unfinished on the interior, constructed with flood-resistant materials below the BFE, and used only for storage. Unless properly elevated on piles or columns in accordance with Section 60.3(e)(4), detached garages are not allowed in V zones."

Cost Impact: The net effect of the Public Comment and code change proposal will decrease the cost of construction. The public comment does not impact the cost of the code change proposal. Therefore, the net effect of the public comment and code change proposal is equal to the cost impact of the code change proposal. No additional cost impact comments.

Final Hearing Results

RB137-22

AS

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Residential

25

SP11472		/RB138-22		25	
Date Submitted	03/27/2024	Section	322.2.2	Proponent	Mo Madani
Chapter	3	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC -R. This code change is already part of the 2023 FBC - R.

Summary of Modification

FEMA regularly responds to questions about whether utility chases and elevator shafts that extend below elevated buildings are enclosures. Code change to address this topic.

Rationale

See attached

SP11472Text Modification

See attached

Page: 1

Mod11472_TextOfModification.pdf

RB138-22

Original Proposal

IRC: R322.2.2, R322.3.5

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Revise as follows:

R322.2.2 Enclosed area below required elevation. Enclosed areas, including crawl spaces, that are below the elevation required in Section R322.2.1 shall:

1. Be used solely for parking of vehicles, building access or storage.
2. Be provided with flood openings that meet the following criteria and are installed in accordance with Section R322.2.2.1:
 - 2.1. The total net area of nonengineered openings shall be not less than 1 square inch (645 mm²) for each square foot (0.093 m²) of enclosed area where the enclosed area is measured on the exterior of the enclosure walls, or the openings shall be designed as engineered openings and the *construction documents* shall include a statement by a registered *design professional* that the design of the openings will provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters as specified in Section 2.7.2.2 of ASCE 24.
 - 2.2. Openings shall be not less than 3 inches (76 mm) in any direction in the plane of the wall.
 - 2.3. The presence of louvers, blades, screens and faceplates or other covers and devices shall allow the automatic flow of floodwater into and out of the enclosed areas and shall be accounted for in the determination of the net open area.

Exceptions: The following shall not be required to comply with this section:

1. Elevator shafts.
2. Utility chases that protect utility lines from freezing, provided the utility chases are the minimum size necessary to protect the utility lines and do not provide access for a person to enter the space.

R322.3.5 Walls below required elevation. Walls and partitions are permitted below the elevation required in Section R322.3.2, provided that such walls and partitions are not part of the structural support of the building or structure and:

1. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and
2. Are constructed with insect screening or open lattice; or
3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a resistance of not less than 10 (479 Pa) and not more than 20 pounds per square foot (958 Pa) as determined using allowable stress design; or
4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), as determined using allowable stress design, the *construction documents* shall include documentation prepared and sealed by a registered *design professional* that:
 - 4.1. The walls and partitions below the required elevation have been designed to collapse from a water load less than that which would occur during the base flood.
 - 4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on structural and nonstructural building components. Water-loading values used shall be those associated with the design flood. Wind-loading values shall be those required by this code.

5. Walls intended to break away under flood loads as specified in Item 3 or 4 have flood openings that meet the criteria in Section R322.2.2, Item 2.

Exceptions: The following shall not be required to comply with this section:

1. Elevator shafts.
2. Utility chases that protect utility lines from freezing, provided the utility chases are the minimum size necessary to protect the utility lines and do not provide access for a person to enter the space.

Reason: FEMA regularly responds to questions about whether utility chases and elevator shafts that extend below elevated buildings are enclosures. Strictly read, Sections R322.2.2 and R322.3.5 apply to elevator shafts and utility chases that extend below elevated buildings, which means the walls must have flood openings and breakaway walls (Zone V and Coastal A Zones). This code change relaxes those requirements, with some limits, in line with IRC Commentary, ASCE 24, and published FEMA guidance. Those sources explain that elevator shafts do not require openings and breakaway walls, but the shafts must meet other requirements (materials, resistance to flood loads). Those sources also explain that utility chases do not require openings and breakaway walls as long as the chases are the minimum size necessary and are not sized or constructed to allow a person to enter the space. If chases allow entry by a person, they must fully comply with the requirements for enclosures, including the use limitations. Chases must meet other requirements (materials, resistance to flood loads).

Bibliography: NFIP Technical Bulletin 9, Design and Construction Guidance for Breakaway Walls (2021), <https://www.fema.gov/emergency-managers/risk-management/building-science/national-flood-insurance-technical-bulletins>

Cost Impact: The code change proposal will decrease the cost of construction. The code change proposal explicitly allows elevator shafts and utility chases to be conventionally built without the installation of flood openings or use of breakaway walls which are required for enclosures below elevated buildings in flood hazard areas. The code change proposal will decrease the cost of construction by avoiding the installation of at two flood openings in each chase and shaft. Engineered flood opening devices cost approximately \$100-\$150 each, not including the cost of installation (nonengineered openings, such as typical air vent device disabled in the open position, cost less). Cost data for fabrication of breakaway walls is not available. NFIP Technical Bulletin 9 contains prescriptive solutions for breakaway walls that do not require certification of design. A typical utility chase is on the order of two to three feet square, thus cost savings are attributable to not having to fabricate approximately eight to twelve feet of breakaway wall.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: The committee concluded this proposal provides additional clarity and design options for utility chases and elevator shafts. (Vote: 10-0)

Final Hearing Results

RB138-22

AS

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Residential

26

SP11473		/RB139-22	
Date Submitted	03/27/2024	Section	322.3.2
Chapter	3	Affects HVHZ	Yes
TAC Recommendation		Proponent	Mo Madani
Commission Action		Attachments	Yes
TAC Recommendation		Staff Classification	Overlap
Commission Action		Staff Classification	Overlap

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC -R. This code change is already part of the 2023 FBC - R.

Summary of Modification

Proposal to clarify where the “bottom of the lowest horizontal structural member” is located when applicants elect to use backfilled stem wall foundations so that designers, builders, and building officials can readily determine compliance.

Rationale

See attached

SP11473Text Modification

See attached

Page: 1

Mod11473_TextOfModification.pdf

RB139-22

Original Proposal

IRC: R322.3.2

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Revise as follows:

R322.3.2 Elevation requirements.

1. Buildings and structures erected within coastal high-hazard areas and Coastal A Zones, shall be elevated so that the bottom of the lowest horizontal structural members supporting the lowest floor, with the exception of piling, pile caps, columns, grade beams and bracing, is elevated to or above the base flood elevation plus 1 foot (305 mm) or the design flood elevation, whichever is higher. Where stem wall foundations are permitted in Coastal A Zones in accordance with Section R322.3.3, the bottom of the lowest horizontal structural member supporting the lowest floor is the top of the foundation wall, or top of the portion of the foundation wall, supporting the slab.
2. *Basement* floors that are belowgrade on all sides are prohibited.
3. Garages used solely for parking, building access or storage, and carports shall comply with Item 1 or shall be at or abovegrade on not less than one side and, if enclosed with walls, such walls shall comply with Item 6.
4. The use of fill for structural support is prohibited.
5. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.
6. Walls and partitions enclosing areas below the elevation required in this section shall meet the requirements of Sections R322.3.5 and R322.3.6.

Reason: Section R322.3.3 Foundations, by exception, allows backfilled stem wall foundations in flood hazard areas designated as Coastal A Zones. Coastal A Zones are areas subject to waves that are between 3 feet and 1.5 feet high. Section R322.3.2 specifies elevation of the "bottom of the lowest horizontal structural members supporting the lowest floor." This proposal does not change the requirement. It clarifies where the "bottom of the lowest horizontal structural member" is located when applicants elect to use backfilled stem wall foundations so that designers, builders, and building officials can readily determine compliance. Relating the required elevation to the wall also removes any confusion should a slab have varying thicknesses at points interior to the perimeter walls. There are different ways to configure the foundation wall and slab connection. Three common options are shown in the figures, with arrows pointing to the top of the foundation wall, or top of the portion of the wall, supporting the slab.

SP11473 Text Modification

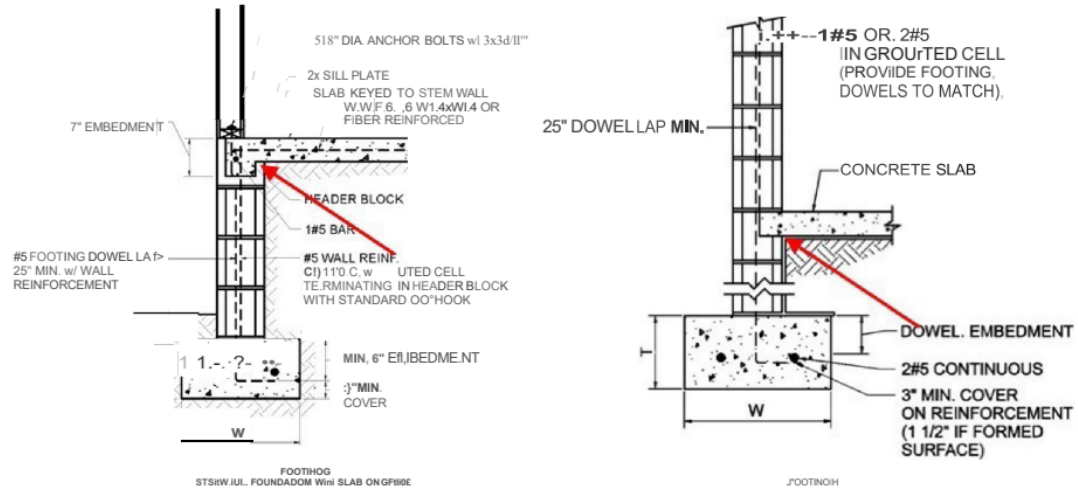
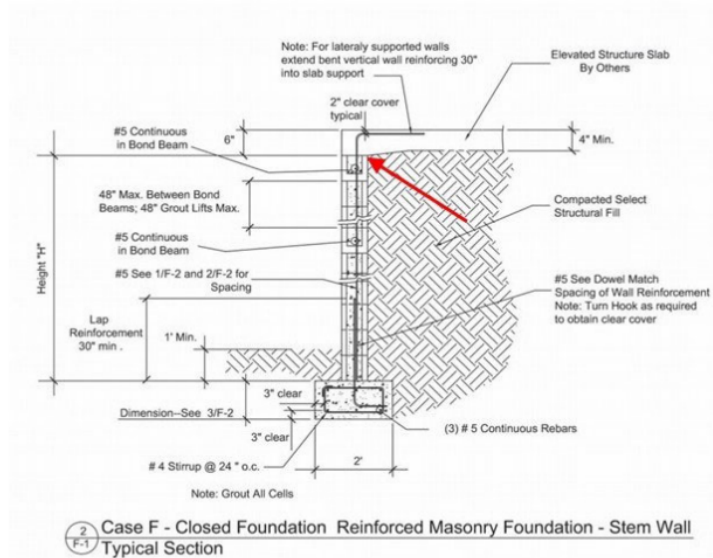


Figure 403.1(1) Concrete and Masonry Foundation Details
(2020 Florida Residential Code)

Page: 2

Mod_11473_Text_RB139-22.pdf



FEMA P-550 Recommended Residential Construction for Coastal Areas

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal clarifies where the "bottom of the lowest horizontal structural member" is when backfilled stem wall foundations are used in Coastal A Zones. There is no change to the actual requirements for elevation of the bottom of the lowest horizontal structural member. By clarifying existing requirements, there will be no cost impact when approving this proposal.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: The committee concluded that this proposal clarifies how the elevation is determined for slab on a backfilled stem wall. The committee recommended that the figures provided in the reason be included in the commentary. (Vote: 10-0)

Final Hearing Results

RB139-22

AS

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Residential

27

SP11474		/RB140-22		27	
Date Submitted	03/27/2024	Section	322.3.3	Proponent	Mo Madani
Chapter	3	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC -R. This code change is already part of the 2023 FBC - R.

Summary of Modification

This proposal requires pilings and columns to be designed in accordance ASCE 24 Flood Resistant Design and Construction, which is the standard of practice for design and construction in flood hazard areas.

Rationale

See attached

SP11474 Text Modification

See attached

Page: 1

Mod11474_ TextOfModification.pdf

RB140-22

Original Proposal

IRC: R322.3.3

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Revise as follows:

R322.3.3 Foundations. Buildings and structures erected in coastal high-hazard areas and Coastal A Zones shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns and shall comply with the following:

1. The space below the elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.5.
2. Pilings shall be designed in accordance with ASCE 24 to have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift) and pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling.
3. Columns and their supporting foundations shall be designed in accordance with ASCE 24 to resist combined wave and wind loads, lateral and uplift, and shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the columns. Spread footing, mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the spread footing, mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. If permitted, spread footing, mat, raft or other foundations that support columns shall be designed in accordance with ASCE 24.
4. Flood and wave loads shall be determined in accordance with ASCE 7 and shall include loads ~~these~~ associated with the design flood. Wind loads shall be those required by this code.
5. Foundation designs and *construction documents* shall be prepared and sealed in accordance with Section R322.3.9.

Exception: In Coastal A Zones, stem wall foundations supporting a floor system above and backfilled with soil or gravel to the underside of the floor system shall be permitted provided that the foundations are designed to account for wave action, debris impact, erosion and local scour. Where soils are susceptible to erosion and local scour, stem wall foundations shall have deep footings to account for the loss of soil.

Reason: Section R322.3.3 applies to buildings in coastal high hazard areas and Coastal A Zones. Those are flood zones with wave action. In coastal high hazard areas, also called V Zones, waves are 3 feet and higher during base flood conditions. Wave heights in Coastal A Zones range from 3 ft to 1.5 feet. FEMA has delineated the inland extent of 1.5 foot waves on many Flood Insurance Rate Maps for coastal communities, labeling the line as the Limit of Moderate Wave Action. Section R322.3.9 requires construction documents to be prepared and sealed by registered design professionals. Section R322.3.3 describes the performance expectations for pilings and columns. This proposal requires pilings and columns to be designed in accordance ASCE 24 Flood Resistant Design and Construction, which is the standard of practice for design and construction in flood hazard areas. Relying on the recognized standard of practice facilitates the design professional's task to satisfy the performance expectations.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

There is no change to the technical content of the section. The code already requires foundations in coastal high hazard areas and Coastal A Zones to be designed by registered design professionals to satisfy the performance expectations of Sec. R322.3.3. The change requires designs in accordance with the recognized standard of practice, which facilitates the design professional's task. There will be no cost impact when this proposal is approved.

SP11474 Text Modification

Public Hearing Results**Committee Action****As Submitted**

Committee Reason: The committee approved this proposal for indicating that ASCE 24 and ASCE 7 are the proper sources for the design of piles and columns for combined wave and wind loads in coastal hazard areas. (Vote: 10-0)

Final Hearing Results

RB140-22

AS

Page: 2

Mod_11474_Text_RB140-22.pdf

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Residential

28

SP11475		/RB142-22			
Date Submitted	03/27/2024	Section	322.3.5	Proponent	Mo Madani
Chapter	3	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

Flood requirement.

Summary of Modification

This code change does not change the loads used to design breakaway walls. It just shows how the loads expressed using allowable stress design are expressed as ultimate loads, which is used in ASCE 7 for seismic design and wind loads.

Rationale

See attached

SP11475Text Modification

See attached

Page: 1

Mod11475_TextOfModification.pdf

RB142-22

Original Proposal

IRC: R322.3.5

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Revise as follows:

R322.3.5 Walls below required elevation. Walls and partitions are permitted below the elevation required in Section R322.3.2, provided that such walls and partitions are not part of the structural support of the building or structure and:

1. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood loads; and
2. Are constructed with insect screening or open lattice; or
3. Are designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a resistance of not less than 10 (479 Pa) and not more than 20 pounds per square foot (958 Pa) as determined using allowable stress design, or a resistance to an ultimate load of not less than 17 (814 Pa) and not more than 33 pounds per square foot (1580 Pa); or
4. Where wind loading values of this code exceed 20 pounds per square foot (958 Pa), as determined using allowable stress design or an ultimate load of 33 pounds per square foot (1580 Pa), the construction documents shall include documentation prepared and sealed by a registered design professional that:
 - 4.1. The walls and partitions below the required elevation have been designed to collapse from a water load less than that which would occur during the base flood.
 - 4.2. The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads acting simultaneously on structural and nonstructural building components. Water-loading values used shall be those associated with the design flood. Wind-loading values shall be those required by this code.
5. Walls intended to break away under flood loads as specified in Item 3 or 4 have flood openings that meet the criteria in Section R322.2.2, Item 2.

Reason: This code change does not change the loads used to design breakaway walls. It just shows how the loads expressed using allowable stress design are expressed as ultimate loads, which is used in ASCE 7 for seismic design and wind loads. One of the reasons for the lower load shown in the existing section is to avoid breakaway walls that might fail under wind loads. Showing the loads expressed as ultimate loads will make it easier to compare to calculated wind loads and seismic loads.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

The code change proposal shows how the loads expressed using allowable stress design are expressed as ultimate loads to better align with ASCE 7. There is no change to the technical content of the provisions. By showing how existing load values are expressed as ultimate loads, there will be no cost impact when approving this proposal.

Public Hearing Results

Committee Action

As Submitted

SP11475Text Modification

Committee Reason: The committee approved this proposal for providing ultimate loads for the design of breakaway walls as well as the current allowable stress loads. (Vote: 10-0)

Final Hearing Results

RB142-22

AS

Page: 2

Mod_11475_Text_RB142-22.pdf

TAC: Special Occupancy

Total Mods for **Special Occupancy** in **Pending Review** : 31

Total Mods for report: 31

Sub Code: Residential

29

SP11629		/RP11-21		29	
Date Submitted	04/02/2024	Section	3101.5	Proponent	Mo Madani
Chapter	31	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

Summary of Modification

This proposal is editorial in nature. This proposal is to correct references to section numbers for flood resistance requirements.

Rationale

See attached

SP11629Text Modification

See attached

Page: 1

Mod11629_TextOfModification.pdf

RP11-21

Original Proposal

IRC: P3101.5

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Revise as follows:

P3101.5 Flood resistance. In flood hazard areas as established by Table R301.2, vents shall be located at or above the elevation required in Section ~~R322.1~~ R322.2 (flood hazard areas including A Zones) or ~~R322.2~~ R322.3 (coastal high-hazard areas including V Zones and Coastal A Zones, where designated).

Reason: This proposal is editorial in nature. This proposal is to correct references to section numbers for flood resistance requirements. Code proposal RB93-07/08 was approved for inclusion in the 2009 IRC and (among many other changes) revised Section P3101.5 to reference the elevation requirements of R324.2.1 or R324.3.2. In the process of renumbering Section R324 to Section R322, it appears the P3101.5 reference to the section numbers were inadvertently revised incorrectly. For consistency with other cross references in the IRC the proposed change refers to the secondary subsection level, not the third-order subsection.

Additionally, the proposal clarifies that Section R322.3 applies to Coastal A Zones in addition to V Zones; the proposed revision to the parenthetical matches the title of Section R322.3, which has applied to Coastal A Zones since the 2015 IRC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The code change proposal is editorial and does not change requirements.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: This is a simple editorial correction. (11-0)

Final Hearing Results

RP11-21

AS

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Residential

SP11596		/RB302-22		30	
Date Submitted	04/02/2024	Section	103.1.1	Proponent	Mo Madani
Chapter	3318	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new Standard AR103.1.1 "Flood hazard areas".

Rationale

See attached

SP11596Text Modification

See attached

Page: 1

Mod11596_TextOfModification.pdf

RB302-22

Original Proposal

IRC: AR103.1.1 (New)

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Add new text as follows:

AR103.1.1 Flood hazard areas. In flood hazard areas established in Table R301.2, light straw-clay infill shall comply with the flood damage-resistant materials requirements of Section R322.1.8.

Reason: Section R322 contains requirements for dwellings in flood hazard areas. Section R322.1.8 requires materials used for walls to be flood damage-resistant materials that conform to NFIP Technical Bulletin 2, Flood Damage-Resistant Materials Requirements. Light straw-clay materials that are inundated by floodwater, especially floodwater that remains high for more than a few hours, could deteriorate. Thus, referring to the flood-damage resistant materials requirement is not a new requirement. Similar "reminders" of the flood provisions appear in Appendix AE (manufactured housing used as dwellings) and Appendix AJ (existing buildings and structures).

We note that the current edition of TB 2 does not include light straw-clay materials. However, an ASTM testing standard is in development (expected to be available for the 2027 I-Codes). When the ASTM standard is cited in a future edition of the codes, that will allow for tested materials that are not specifically listed in TB 2.

Cost Impact: The code change proposal will not increase or decrease the cost of construction

Because dwellings in flood hazard areas must already comply with Section R322, a reminder of compliance with the flood-resistant materials requirements is not a change. By referring to the existing requirement, there will be no cost impact when approving this proposal.

Public Hearing Results

Committee Action

As Modified

Committee Modification:

~~**AR103.1.1**~~ **AR101.2 Flood hazard areas.** In flood hazard areas established in Table R301.2, buildings using light straw-clay infill shall meet the requirements of Section R322.1.8.

Committee Reason: This proposal for the appendix for Light Straw-Clay Construction was approved because requirements for flood hazard issues should be applied equally to all products of the built environment. The modification provides better language and is inclusive of all of Section R322. (Vote: 10-0)

Final Hearing Results

RB302-22

AM

TAC: Special Occupancy

Total Mods for Special Occupancy in Pending Review : 31

Total Mods for report: 31

Sub Code: Residential

SP11597		/RB304-22		31	
Date Submitted	04/02/2024	Section	101.3	Proponent	Mo Madani
Chapter	3319	Affects HVHZ	Yes	Attachments	Yes
TAC Recommendation	Pending Review			Staff	Correlates
Commission Action	Pending Review			Classification	Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new Section AS101.3 "Flood hazard areas".

Rationale

See attached

SP11597Text Modification

See attached

Page: 1

Mod11597_TextOfModification.pdf

RB304-22

Original Proposal

IRC: AS101.3 (New)

Proponents: Gregory Wilson, Federal Emergency Management Agency, FEMA (gregory.wilson2@fema.dhs.gov); Rebecca Quinn, RCQuinn Consulting, Inc., DHS Federal Emergency Management Agency (rcquinn@earthlink.net)

2021 International Residential Code

Add new text as follows:

AS101.3 Flood hazard areas. In flood hazard areas established in Table R301.2, buildings using strawbale wall systems shall meet the requirements of Section R322.

Reason: Section R322 contains requirements for dwellings in flood hazard areas. Thus, referring to Section R322 is not a new requirement. Similar "reminders" of the flood provisions appear in Appendix AE (manufactured housing used as dwellings) and Appendix AJ (existing buildings and structures).

Cost Impact: The code change proposal will not increase or decrease the cost of construction. Because dwellings in flood hazard areas must already comply with Section R322, a reminder of compliance with the flood-resistant requirements is not a change. By referring to the existing requirements, there will be no cost impact when approving this proposal.

Public Hearing Results

Committee Action

As Submitted

Committee Reason: This proposal for the Appendix for Strawbale Construction was approved because requirements for the flood hazard areas should apply equally to all products of the built environment. (Vote: 10-0)

Final Hearing Results

RB304-22

AS