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850-487-1824

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Building

P10927	/G3-21 Part III				1
Date Submitted	03/08/2024	**Section**	202	**Proponent**	Mo Madani
Chapter	2	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new definition "[BG] AMBULATORY CARE FACILITY". The intent is to not appear to have two different types of ‘ambulatory care facilities’.

Rationale

See attached

P10927Text Modification

See attached

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Mod10927_TextOfModification.pdf

P10927Text Modification

G3-21 Part III

Original Proposal

PART III - IPC: SECTION 202(New), 609.1

Proponents: John Williams, Chair, Healthcare Committee (ahc@iccsafe.org)

2021 International Plumbing Code

Add new definition as follows:

[BG] AMBULATORY CARE FACILITY

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Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable.

Revise as follows:

609.1 Scope. This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following *occupancies*: Group I-1, Group I- 2, ~~Group B~~ ambulatory care facilities, medical offices, research and testing laboratories, and Group F facilities manufacturing pharmaceutical drugs and medicines.

Reason: The term “ambulatory care facility” is currently defined in the IBC and IFC. It should be defined in the other codes where the term is used. When this item was first introduced to the codes, it was believed that it was needed to add ‘Group B’ in front of the term. This proposal removes it as no longer necessary, and will make this consistent with the numerous other locations throughout the codes where ‘Group B’ in not included. The intent is to not appear to have two different types of ‘ambulatory care facilities’.
There will also be a Group B proposal to IEBC to add the definition and correct the terms in 302.2.1, 503.15 and 805.11.

The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. In 2020 the CHC held several virtual meeting, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at CHC.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction
This an editorial clarification for consistent terminology

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The proposal provides for consistency with the building code. (13-1)

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Mod_10927_Text_G3-21 Part III.pdf

P10927Text Modification

Final Hearing Results

G3-21 Part III AS

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Building

P10919 | **/G1-21 Part III** | 2

Date Submitted	03/08/2024	**Section**	403.11.7	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Term ‘accessible’ is understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with defined terms or phrases that are not attributed to requiring access for the physically disabled.

Rationale

See attached

P10919Text Modification

See attached

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Mod10919_TextOfModification.pdf

P10919Text Modification

G1-21 Part III

Original Proposal

PART III - IFGC: 403.11.7, 404.8.2, 404.14.2, 409.5.3, 409.6, 411.1.6, 501.7.3, 503.5.9, 503.12.6

Proponents: Mike Nugent, Chair, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, Chair, FCAC (fcac@iccsafe.org); Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Fuel Gas Code

Revise as follows:

403.11.7 Lapped flanges. Lapped flanges shall be used only above ground or in exposed locations~~accessible~~ with access for inspection.

404.8.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in ~~an accessible~~ a portion of the building with access and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.

404.14.2 Conduit with both ends terminating indoors. Where the conduit originates and terminates within the same building, the conduit shall originate and terminate in ~~an accessible~~ a portion of the building with access and shall not be sealed. The conduit shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.

409.5.3 Located at manifold. Where the *appliance* shutoff valve is installed at a manifold, such shutoff valve shall be located within 50 feet (15 240 mm) of the *appliance* served and shall ~~be readily accessible~~ have ready access and be permanently identified. The *piping* from the manifold to within 6 feet (1829 mm) of the *appliance* shall be designed, sized and installed in accordance with Sections 401 through 408.

409.6 Shutoff valve for laboratories. Where provided with two or more fuel gas outlets, including table-, bench- and hood-mounted outlets, each laboratory space in educational, research, commercial and industrial *occupancies* shall be provided with a single dedicated shutoff valve through which all such gas outlets shall be supplied. The dedicated shutoff valve shall ~~be readily accessible~~ have ready access, be located within the laboratory space served, be located adjacent to the egress door from the space and shall be identified by *approved* signage stating “Gas Shutoff.”

411.1.6 Unions. A union fitting shall be provided for *appliances* connected by rigid metallic pipe. Such unions shall~~be accessible~~ have access and be located within 6 feet (1829 mm) of the *appliance*.

501.7.3 Connection to masonry fireplace flue. A connector shall extend from the *appliance* to the flue serving a masonry *fireplace* such that the flue gases are exhausted directly into the flue. The connector shall ~~be accessible~~ have access or be removable for inspection and cleaning of both the connector and the flue. *Listed* direct connection devices shall be installed in accordance with their listing.

503.5.9 Cleanouts. Where a chimney that formerly carried flue products from liquid or solid fuel-burning appliances is used with an *appliance* using fuel gas, ~~an accessible~~ a cleanout with access shall be provided. The cleanout shall have a tight-fitting cover and shall be installed so its upper edge is not less than 6 inches (152 mm) below the lower edge of the lowest chimney inlet opening.

503.12.6 Positioning. Draft hoods and draft regulators shall be installed in the position for which they were designed with reference to the horizontal and vertical planes and shall be located so that the relief opening is not obstructed by any part of the *appliance* or adjacent construction. The *appliance* and its draft hood shall be located so that the relief opening~~is accessible~~ has access for checking vent operation.

Reason: This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide

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coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 . Because the term 'accessible' is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. Many of the codes use the defined term 'access (to)' or 'ready access (to)' for access by maintenance and service personnel or fire departments. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes.

Code change proposal M2-15 removed 'door' from the definitions for 'access (to)' and 'ready access (to)'. That coordination item did not happen across codes and this proposal seeks to complete that effort.

Similar proposals will be submitted for the Group B cycle for IRC, IECC and IEBC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC), ICC Fire Code Action Committee (BCAC), and ICC Plumbing/Mechanical/Gas Code Action Committee (PMGCAC).
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 PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: PMGCAC.

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
There is no change to any of the requirements. This is only a clarification in terminology.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

P10919Text Modification

Final Hearing Results

G1-21 Part III AS

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Building

P11029		/G99-21 Part VI			3
Date Submitted	03/13/2024	**Section**	1005	**Proponent**	Mo Madani
Chapter	10	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Table 1004.5

Summary of Modification

This is several proposals across multiple codes and standards to propose requirements appropriate to the unique characteristics of facilities housing computer rooms and data centers or Information technology equipment (ITE)

Rationale

See attached

P11029Text Modification

See attached

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Mod11029_TextOfModification.pdf

P11029Text Modification

G99-21 Part VI

Original Proposal

PART VI - IBC:TABLE 1004.5, 1004.8 (IFC[BE] TABLE 1004.5, 1004.8)

Proponents: Greg Johnson, Johnson & Associates Consulting Services, Codes & Standards International (gjohnsonconsulting@gmail.com); Jay Peters, Codes and Standards International, Vertiv (peters.jay@me.com); Andrew Klein, A S Klein Engineering, Building Owners and Managers Association International (andrew@asklein.com); Barry Greive, Target Corporation, Target Corporation (barry.greive@target.com); David Collins, The Preview Group, Inc., The Preview Group, Inc. (dcollins@preview-group.com); Lee Kaiser, ORR Protection, NFPA 75 Technical Committee (ELT-AAA) (lkaiser@orrprotection.com)

2021 International Building Code

Revise as follows:

TABLE 1004.5 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

Portions of table not shown remain unchanged.

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR[a]
Business areas	150 gross
Information Technology Equipment Facilities	300 gross
Concentrated business use areas	See Section 1004.8

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

a. Floor area in square feet per occupant.

1004.8 Concentrated business use areas. The*occupant load* factor for concentrated business use shall be applied to telephone call centers, trading floors, electronic data ~~processing~~entry centers and similar business use areas with a higher density of occupants than would normally be expected in a typical business occupancy environment. Where approved by the *building official*, the *occupant load* for concentrated business use areas shall be the actual *occupant load*, but not less than one occupant per 50 square feet (4.65 m^2) of gross occupiable floor space.

Reason: General information -

This is several proposals across multiple codes and standards to propose requirements appropriate to the unique characteristics of facilities housing computer rooms and data centers or *Information technology equipment* (ITE).Computer rooms and data centers are mission critical applications. All aspects of our public infrastructure, transportation, our education system, our healthcare system, our national defense, our banking, our public safety systems, our process for writing codes - our lives - are wholly dependent on the efficient real-time processing of data. The ITE used to perform this function must be 100% reliable.
For these reasons ITE facilities are secured spaces, atmospherically and physically, with tightly controlled access.

Because access to ITE facilities is restricted, and because ITE facilities are only accessed by technicians performing periodic process maintenance, the occupant load of these spaces is intermittent or sparse.

Like many process industries, ITE facilities have specific environmental process constraints if they are to function properly:

- ITE needs to be continuously cooled to protect the data and sometimes the best way to cool the equipment is to cool the roo

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- ITE is extremely sensitive to humidity and atmospheric contaminants; it can ruin equipment and thereby data. Ideally, ITE facilities bring in no outside air or moisture into ITE spaces; ventilation for refrigerants within ITE facilities is solely to reduce refrigerant concentration by fully mixing refrigerant into the atmosphere of the space.
- Alternative methods of fire suppression may be most suitable.

Until recently ITE facilities used nonflammable A1 refrigerants, but separate rule makings by the California Air Resources Board and the US Environmental Protection Agency now require refrigerants to meet Global Warming Potential (GWP) values that are much lower than currently possible with commercially available A1 refrigerants.

For this reason the ITE facilities cooling industry is adopting the use of A2L refrigerants which perform well, which are environmentally friendlier and which have much lower GWP values, but which are mildly flammable.

Adoption of A2L refrigerant necessitates ITE facility code requirements that provide the right protection for the unique industrial process being protected.

Requirements addressing ITE facilities must be flexible and performance oriented to address the many potential configurations of these spaces, from small computer rooms within much larger uses, or as one use in multiple occupancies, to unlimited area data centers that occupy millions of square feet of land, (https://www.analyticsvidhya.com/blog/2020/09/8-largest-data-centers-world-2020/).

PART I - IBC DEFINITIONS

Using common definitions for information technology equipment, data centers and computer rooms will foster uniformity of application between codes and related standards. These definitions have been proposed for use by the building, fire, and mechanical codes as well as ASHRAE 15, the *Safety Standard for Refrigeration Systems*. They are consistent with definitions used in the ASHRAE 90.4*Energy Standard for Data Centers* as well as NFPA 75 *Standard for the Fire Protection of Information Technology Equipment*. It is likely that the

definitions of data centers and computer rooms will be added to future editions of the IECC.The definitions for computer rooms and data centers are based ASHRAE Standard 90.4-2019 *Energy Standard for Data Centers* except that the definition of computer rooms was modified to clarify that computer rooms are not primarily used for any other purpose than to house *information technology equipment*. This modification is necessary to distinguish computer rooms (data processing) from rooms where occupants use computers (data entry).

PART II -IBC Section 429 (New)

See the general reason.

NFPA 75, *The Standard for the Protection of Information Technology Equipment* is proposed as the appropriate reference to assure:

- The need for appropriate fire protection is met regardless of the configuration of the ITE facility.
- The fire protection package appropriately considers the unique environmental needs of the ITE facility.

NFPA 75 benefits from the involvement of subject matter experts in the design, operation and fire protection of these unique industrial processes.

NFPA 75 is realistic and flexible; it requires a documented risk assessment of the ITE facility to serve as the basis for a fire protection approach that is "*permitted to be determined based on an evaluation of fire risks and hazards associated with the* ITE *and services provided and the business continuity planning and disaster restoration capabilities of the* ITE *specific to the* ITE."

NFPA 75 also anticipates that alternative methods of fire suppression may be most suitable to protect data processing capacity and provides references to those NFPA standards that address such systems. It sets forth *"the minimum requirements for the protection of* ITE *equipment and* ITE *areas from damage by fire or its associated effects — namely, smoke, corrosion, heat, and wate.r*"

In addition to the reference to NFPA 75 for performance design provisions, this proposal provides simple prescriptive requirements consistent with the treatment of locations classified as controlled access, industrial occupancies by ASHRAE 15 *Safety Standard for Refrigeration Systems* and the International Mechanical and Fire Codes.

By section, this proposal does the following:

· **Sec. 429.1 General** classifies ITE facilities as industrial occupancies to align with Sec. 1103 of the IMC. Per the IMC, which is consistent with ASHRAE 15, an industrial occupancy is "*that portion of premises that is not open to the public, where access by authorized persons is controlled, and that is used to manufacture, process or store goods such as chemicals, food, ice, meat or petroleum.*" A change has been proposed for the IMC and to ASHRAE 15 to specifically include ITE facilities in this classification.

· **Sec. 429.2 Refrigerants** limits refrigerants to nonflammable or mildly flammable refrigerants, but also provides clarification that the AHJ can approve other refrigerants on an individual basis.

· **Sec. 429.3 Fire Protection** references NFPA 75.

· **Sec. 429.4 Design and construction** requires a minimum of a one-hour fire separation between the ITE facility and adjacent occupancies, but reasonably provides flexibility for small spaces in fully sprinklered buildings. It also requires materials in concealed spaces, such as below a raised floor or above a suspended ceiling to be those permissible for use in a plenum.

· **Sec. 429.5 Electrical** requires compliance for non-IT equipment with Class 1, Division 2, of NFPA 70 (Class I - Flammable gases or vapors may be present; Division 2 - Ignitable concentrations of hazards exist under abnormal operation conditions) requirements where the code official has approved a refrigerant other than a Group A1 or A2L.

· **Sec. 429.6 Ventilation** requires mechanical ventilation of the ITE space to be triggered by refrigerant detection in accordance with the IMC and its secondary reference to the IFC Sec. 608.9. It also permits required ventilation to mix leaked refrigerant in the ITE space without exhausting the space or bringing in make-up air, thereby protecting the ITE from airborne contaminants and undesirable humidity.

· **Sec. 429.7 Refrigerant detection** references the IFC for refrigerant detection provisions and assures the appropriate initiation of measures to address an unintended leak of refrigerant or failure of the detection system.

· **Sec. 429.8 Standby power** ensures that active detection and protection measures are always available.

· **Sec. 429.9 Common path of egress travel** requires ITEF to comply with the same means of egress requirements as those specified in Section 1006.2.2.3 for refrigerated rooms or spaces. All portions of an ITEF must be within 150 feet of an exit or exit access doorway where such facilities are not protected by an approved automatic sprinkler system.

PART III - IBC Section 306.3 Group F-2

It is proposed to add Information Technology Equipment Facilities (data centers and computer rooms) to the F-2 occupancy group as they

are industrial applications not currently addressed by the code with any specificity.

A separate code change proposes to add a section in Chapter 4 to address Information Technology Equipment Facilities (ITEF), but the correct occupancy group should be established.

ITEFs are buildings and spaces that are not open to the public, where access by authorized persons is controlled, and that are used to store and process electronic information or data. They are accessed only by IT maintenance technicians and have low or only intermittent occupant loads

USEPA and California regulations require transition to lower global warming potential refrigerants, which in turn requires changes in provisions in model codes and standards related to the safe use of new A2L (mildly flammable) refrigerants.

PART IV - IBC Section 311.3 Group S-2

Information technology equipment facilities are unique low hazard and low occupancy uses where data is stored and processed in racked equipment. While there are some moderate hazards specific to ITE facilities under abnormal operational conditions, those hazards are anticipated and mitigated by the codes:

- ITE facilities must be cooled for ITE performance. Potential hazards from flammable refrigerants are managed by compliance with the refrigerant safety provisions of the IMC, the IFC and ASHRAE 15 thereby assuring that leaked flammable refrigerants are detected and managed appropriately.
- IMC Section 1104.2.2 requires that the electrical equipment and appliances in ITE facilities must conform to the Class I, Division 2, hazardous location classification requirements of NFPA 70 where the quantity of any Group A2, B2, A3 or B3 refrigerant in a single independent circuit would exceed 25 percent of the lower flammability limit (LFL) upon release to the space.
- Cabling in underfloor and above ceiling plenum areas of ITE facilities is required to comply with IMC Section 602.2.1.1 and electrical

equipment exposed in plenums must comply with IMC Sec. 602.2.1.4.

PART V - IBC Table 509.1 Incidental Uses

Information technology equipment (ITE) facilities -data centers and computer rooms - are cooled for industrial process reasons so that the ITE can operate as needed. This means these facilities can have a significant refrigerant load, just like a refrigerant machinery room, without necessarily having a machinery room. Refrigerant machinery rooms already are identified in Table 509.1 as needing either a one-hour separation or automatic sprinkler system protection. ITE facilities should meet the same standard, except that ITE facilities may need alternative fire protection methods for ITE.

PART VI - IBC Table 1004.5 Occupant Load Factor

The original proponent of Section 1004.8 (Group A, 2015: E9-15) included the section as part of a successful effort to increase the Table 1004.5 occupant load factor (OLF) for the typical business use from 100 to 150 SF gross per occupant. Section 1004.8 was added to ensure that the newly less stringent OLF was not applied inappropriately to business use areas known to have a higher density of occupants.

Data centers and computer rooms do not have a higher density of occupants, but typically have very low or intermittent occupancy loads, being occupied by only IT staff who periodically perform equipment maintenance functions. For this proposal, 300 SF gross OLF was selected as a conservative and appropriate OLF because the footprint of racks of *information technology equipment* are comparable to footprint of the racks of shelving in storage and stock areas of mercantile uses, even though such mercantile areas would be far more frequently occupied.

Data centers and computer rooms have significant cooling needs for process purposes; keeping ITE cool enough is mission critical. USEPA and California regulations require transition to lower global warming potential refrigerants, which in turn requires changes in provisions in model codes and standards related to the safe use of new refrigerants. Using common definitions for data centers and computer rooms will foster uniformity of application between codes and related standards. These definitions have been proposed for use by the building, fire, and mechanical codes as well as ASHRAE 15, the *Safety Standard for Refrigeration Systems*.

PART VII - IBC Section 1010.2.9.2 ITEF exits

Information technology equipment (ITE) facilities (computer rooms and data centers) are cooling intensive spaces because of equipment process needs and have similar exiting concerns to refrigeration machinery rooms because of hazards related to refrigerants.

A separate code change proposal will add ITE facilities (computer rooms and data centers) to the IMC's industrial occupancy classification in recognition of the process cooling needs unique to ITE facilities. This change will permit computer rooms and data centers that comply with new IMC Section 1104.2.3 to have space cooling without requiring a refrigeration machine room per Section 1104.2.2.

PART VIII - IFC Definitions

See the commentary to IBC Definitions above.

PART IX - IFC Section 609.8.1

See the general reason above.

Separate proposals for Chapter 11 of the IMC and Chapter 4 of the IBC apply occupancy specific requirements to ITE facilities. Those proposals:

- limit refrigerants to nonflammable Group A1 and mildly flammable Group A2L refrigerants
- require electrical equipment conformance with the Class I, Division 2, hazardous location classification requirements of NFPA 70, and
- reference NFPA 75, *The Standard for the Protection of Information Technology Equipment* to assure appropriate fire protection is provided regardless of the configuration of the ITE facility and the fire protection package appropriately considers the unique environmental needs of the ITE facility.

- require ITE facilities to be separated from adjacent uses by fire barriers and horizontal assemblies.

Given the other fire safety provisions proposed to apply to ITE facilities, and in recognition that stopping the cooling of an ITE space could jeopardize the data and data processes, automatic stopping of cooling is inadvisable.

Required detection and alarms will inform the facility manager and fire officials of the potential hazard, thereby providing an opportunity for data backup and potential purging of the ITE facility atmosphere.

PART X - IMC Definitions

See the commentary to IBC Definitions above.

PART XI - IMC Occupancy classification.

This proposed change clarifies that data centers and computer rooms, which are cooled solely for the process loads associated with *information technology equipment*, are industrial occupancies.

Per Sec. 1103.2 (6), key features of an industrial occupancy are that it is that portion of a premises that is not open to the public and where access by authorized persons is controlled, both of which are characteristic of data centers and computer rooms.

Industrial occupancies also are defined by the processing of "goods." For data centers and computer rooms the 'goods' being processed is data or electronic information.

It is worth noting that no other occupancy classification specifically addresses any of the characteristics of data centers and computer rooms. The catchall provision in the Commercial occupancy classification for "*work or storage areas that do not qualify as industrial occupancies*," is not appropriate as space cooling in commercial occupancies is intended for comfort cooling, not for process cooling and occupant loads for industrial applications are very low, with restricted access, compared to commercial occupancies that may have no restrictions on access.

Data centers and computer rooms have significant cooling needs for process purposes; keeping ITE cool enough is mission critical.

USEPA and California regulations require transition to lower global warming potential refrigerants, which in turn requires changes in provisions in model codes and standards related to the safe use of new refrigerants. Using common definitions for data centers and computer rooms will foster uniformity of application between codes and related standards. These definitions have been proposed for use by the building, fire, and mechanical codes as well as ASHRAE 15, the *Safety Standard for Refrigeration Systems*.

The definitions for computer rooms and data centers are based upon ASHRAE Standard 90.4-2019*Energy Standard for Data Centers*.

Appropriately classifying data centers and computer rooms will facilitate the drafting of requirements for the IMC that address the unique circumstances of these occupancies.

PART XII - IMC 1104.2.3 ITEF

See the general reason above.

Currently Sec 1106.3 requires that machinery rooms for Group A2L refrigerants must either conform to Class I, Division 2, hazardous location classification requirements of NFPA 70 **OR** provide provide emergency exhaust ventilation (Sec 1106.4). This proposal allows Group A2L to be used without NFPA 70 compliance and without exhaust ventilation in deference to the ITE environmental needs. A separate proposal to add requirements for ITE facilities in Chapter 4 of the building code clarifies that emergency ventilation for ITE facilities is only required to mix the atmosphere within the ITE space so that leaked refrigerant is fully dispersed.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
PART I, VIII and X - The definitions are to information only and will not add any additional construction requirements.
P ART II- In some facilities there may be an additional cost; in others there may be less cost. It will be very building specific.
PART III - This is a clarification.
PART IV- This is a clarification.
PART V - There may additional costs to provide 1 hour separation for the space where the building does not have a fire sprinkler or fire extinguishing system.
PART VI - Means of egress systems will be 'right sized' for data centers and computer rooms.
PART VII - There may be a minimal increase for exit access doors in certain circumstances.

PART IX- Manual controls for refrigeration equipment shut-off should be less expensive than automatic controls.

P11029Text Modification

PART XI -This proposal will match the space use with the correct requirements which will tend to lower construction costs.

PART XII - Having use specific requirements for ITE facilities should minimize costs by avoiding requirements that do not fit the condition.

Public Hearing Results

Committee Action **As Modified**

Committee Modification: TABLE 1004.5 MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

FUNCTION OF SPACE	OCCUPANT LOAD FACTOR[a]
Business areas	150 gross
~~*Information Technology Equipment Facilities*~~	~~300 gross~~
Concentrated business use areas	See Section 1004.8
Information Technology Equipment Facilities	300 gross

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

a. Floor area in square feet per occupant.

Committee Reason: The modification moved Information Technology Equipment Facilities out from under business, which is a more appropriate location. The proposal was approved as it separated data entry from equipment facilities. The coordinates with the action on G99-21 Part 1. (Vote: 14-0)

Final Hearing Results

G99-21 Part VI AM

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Building

P10920		/G1-21 Part IV			4
Date Submitted	03/08/2024	**Section**	1210.2.2	**Proponent**	Mo Madani
Chapter	12	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Term ‘accessible’ is understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with defined terms or phrases that are not attributed to requiring access for the physically disabled.

Rationale

See attached

P10920Text Modification

See attached

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P10920Text Modification

G1-21 Part IV

Original Proposal

PART IV - IPC: 1302.9; IBC: [P]1210.2.2; ICCPC: [P]1204.3.3

Proponents: Mike Nugent, Chair, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, Chair, FCAC (fcac@iccsafe.org); Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Building Code

Revise as follows:

[P] 1210.2.2 Walls and partitions. Walls and partitions within 2 feet (610 mm) of service sinks, urinals and water closets shall have a smooth, hard, nonabsorbent surface, to a height of not less than 4 feet (1219 mm) above the floor, and except for structural elements, the materials used in such walls shall be of a type that is not adversely affected by moisture.

Exception: This section does not apply to the following buildings and spaces:

1. Dwelling units and *sleeping units*.
2. Toilet rooms that are not~~accessible to the~~ for use by the general public and that have not more than one water closet.

Accessories such as grab bars, towel bars, paper dispensers and soap dishes, provided on or within walls, shall be installed and sealed to protect structural elements from moisture.

Reason: This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 . Because the term 'accessible' is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. Many of the codes use the defined term 'access (to)' or 'ready access (to)' for access by maintenance and service personnel or fire departments. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes.

Code change proposal M2-15 removed 'door' from the definitions for 'access (to)' and 'ready access (to)'. That coordination item did not happen across codes and this proposal seeks to complete that effort.

Similar proposals will be submitted for the Group B cycle for IRC, IECC and IEBC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC), ICC Fire Code Action Committee (BCAC), and ICC Plumbing/Mechanical/Gas Code Action Committee (PMGCAC).
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

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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 PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: PMGCAC.

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
There is no change to any of the requirements. This is only a clarification in terminology.

Public Hearing Results

Committee Action **Disapproved**

Committee Reason: Although the intent of the proposal is understood, including the word "easy" continues a poor code text practice. Either something has access (see defined term) or it doesn't. (14-0)

Public Comments

Public Comment 1

Proponents: Mike Nugent, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

1302.9 Pumping and control system . Mechanical equipment including pumps, valves and filters shall~~be~~ have ~~easy~~ access and be removable in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section 604 .

Commenter's Reason: The Plumbing committee felt that this was an appropriate change, but did not like the word 'easy' in Section 1302.9 as this is not uniformly enforceable. The BCAC used the word only because the original language was 'easily accessible'. However, we agree with the committee and are proposing to delete that word. We ask the membership to approve this proposal with that revision. This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 as well at G1-21 Parts 2, 3, 5 and 6.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction
This proposal continues the committee work to remove 'accessible' where the context is not about accessibility for persons with disabilities. The defined terms 'access to' and 'ready access' is used where appropriate. The modifications were to address concerns expressed during

P10920Text Modification

the testimony and expressed by the Egress committee.

Final Hearing Results

G1-21 Part IV AMPC1

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Building

P11637	/P24-21 Part II		5

Date Submitted	05/14/2024	**Section**	1210.3.2	**Proponent**	Mo Madani
Chapter	12	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments Yes

Related Modifications

Original text of mod is not consistent with that of the 2023 FBC-B. Section 2903.1.4 does not exist in the FBC - B.

Summary of Modification

seeks to maintain issues pertaining to the interior environment of toilet facilities in Chapter 12 and to streamline Section 2902 to include only those requirements that address the calculation and the distribution of the number and type of plumbing fixtures required

Rationale

See attached

1st Comment Period History

P11637-G1

Proponent Gary Kozan Submitted 5/28/2024 11:02:55 AM Attachments No

Comment:

This is not an Overlap. Section 2903.1.4 DOES exist in the FBC-B. This proposal merely reorganizes and streamlines sections of Chapter 12 and Chapter 29, thereby eliminating duplicate sections. It neither adds nor eliminates existing language or code requirements. There has been a flurry of activity in recent years regarding bathroom facilities and privacy provisions, and it is important to maintain consistency with the I-Codes. I support this code change.

P11637Text Modification

See attached

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Mod11637_TextOfModification.pdf

P24-21 Part II

Original Proposal

IBC: [P] 1210.3.2, [P] 2903.1.5, [P] 2903.1.4

Proponents: Emma Gonzalez-Laders, NYS DOS Division of Building Standards and Codes, NYS DOS Division of Building Standards and Codes (emma.gonzalez-laders@dos.ny.gov); China Clarke, New York State Dept of State, New York State Dept of State (china.clarke@dos.ny.gov)

2021 International Building Code

Revise as follows:

[P] 1210.3.2 Urinal partitions. Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be no less than 30 inches (762 mm).The walls or partitions shall begin at a height not ~~more~~greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater. Urinals located in facilities designed for the use of all persons regardless of sex shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.

Exceptions:

1. Urinal partitions shall not be required in a single-occupant or family or assisted-use toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

[P] ~~2903.1.5 Urinal partitions.~~ ~~Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm) or to a point not less than 6inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.~~

~~Exceptions:~~

1. ~~Urinal partitions shall not be required in a single-occupant or family/assisted-use toilet room with a lockable door~~.
2. ~~Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.~~

[P] ~~2903.1.4 Water closet compartment.~~ ~~Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.~~

~~Exceptions:~~

1. ~~Water closet compartments shall not be required in a single-occupant toilet room with a lockable door~~.
2. ~~Toilet rooms located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.~~
3. ~~This provision is not applicable to toilet areas located within Group I-3 housing areas~~.

Reason: Sections 1210 and 2902 of the 2021 IBC are complementary to each other, thus, pointers are provided in Sections 2902 and 1210.1. However, their focus and purpose are different.
The purpose of Chapter 29 of the IBC, as stated in the commentary, is “to provide a building with the necessary**number** of plumbing

fixtures of a specific type and quality." The commentary explains in great detail the methodology and difficulties in establishing the appropriate number of fixtures for each type of facility. Those difficulties continue beyond the code books as code users attempt to establish the appropriate number of fixtures for specific buildings and facilities. Much clarification is still needed in this section to enable users to make the appropriate determination.

On the other hand, and also according to the commentary, "the purpose of Chapter 12 is to establish minimum conditions for the**interior environment** of a building." Conditions that include not only the physical but also the psychological needs of the occupants, including space perception and privacy.

In keeping with that distinction, this proposal seeks to maintain issues pertaining to the interior environment of toilet facilities in Chapter 12 and to streamline Section 2902 to include only those requirements that address the calculation and the distribution of the number and type of plumbing fixtures required.

Also, in response to public comment received from design professionals, this proposal seeks to resolve the practical challenges and misuse that results from placing urinals in stalls and to remove unnecessarily repetitive language. Specifically, and in summary, this proposal seeks to:

1. Relocate the privacy requirements for urinals from exception2 in 2902.1.1 to Section 1210.3.2 of the 2021 IBC.
2. Relocate the performance language to accomplish privacy for urinals from exception 6 in Section 2902.2 to Section 1210.3.2 of the 2021 IBC.
3. Modify Section 1210.3.2 by incorporating the differences in language that were made to Section 2903.1.5 of the 2021 IBC in the last code cycle.
4. Since Section 2903.1.4 pertaining to privacy for water closets is a duplicate of Section 1210.3.1 and Section 2901.1 already includes a pointer to Section 1210, to remove the duplicate section in Chapter 29 of the 2021 IBC.
5. Since Section 2903.1.5 pertaining to privacy for urinals is a duplicate of Section 1210.3.2 and Section 2901.1 already includes a pointer to Section 1210, to remove the duplicate section in Chapter 29 of the 2021 IBC.

Sections 2903.1.4 and 2903.1.5 were modified by public comment during the last code cycle as Code Change No: G133-18. According to the proponent's justification, the proposal intended to bring *"language from the IPC into the IBC where designers that utilize the IBC can find this information more readily. [since] Most architectural firms do not have an IPC in their office."* However, those provisions already existed in the IBC and adding them to Chapter 29 was unnecessary.

This proposal neither introduces new nor eliminates existing language or code requirements. It seeks instead to consolidate all privacy provisions into one place (Chapter 12) and to ensure that the provisions included in Chapter 29 are consistent with the stated Scope of the Chapter.

Bibliography: Code Change Proposal G133-18 as Modified by Public Comment. Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC; David Collins.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal neither adds nor subtracts code requirements and simply re-organizes existing provisions and deletes duplicate provisions within the IBC.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This proposal consolidates the requirement and reduces words in the code. (14-0)

Final Hearing Results

P24-21 Part II AS

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Building

P11673	/ADM52-22				6
Date Submitted	05/14/2024	**Section**	35	**Proponent**	Mo Madani
Chapter	35	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Modification lists the updated standards in the IBC.

Rationale

See attached

P11673Text 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~~ 2023	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~~ 2023	Residential Equipment Selection	IECC®	
ANSI/ACCA 3 Manual S—~~2014~~ 2023	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~~ AFSI-77	~~Fabric Structures Associated Air Structures 2016~~ Air Structures Design and Standards Manual	IFC

AHAM	Association of Home Appliance Manufacturers	
Standard Reference Number	**Title**	**Referenced in Code(s):**
ANSI/AHAM RAC-1—~~2015~~ 2020	Room Air Conditioners	IECC®

AHRI	Air-Conditioning, Heating, & Refrigeration Institute	
Standard Reference Number	**Title**	**Referenced in Code(s):**
1160 (I-P) —~~2014~~ 2022	Performance Rating of Heat Pump Pool Heaters ~~(with Addendum 1)~~	IECC®
1160 (I-P)—~~2014~~ 2022	Performance Rating of Heat Pump Pool Heaters ~~(with Addendum 1)~~	ISPSC

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1200 (I-P)—~~2013~~ 2022	Performance Rating of Commercial Refrigerated Display Merchandisers and Storage Cabinets	IECC®
1230 (I-P)—~~2014~~ 2021	Performance Rating of Variable Refrigerant Flow (VRF) Multi-split Air-Conditioning and Heat Pump Equipment ~~(with Addendum 1)~~	IECC®
1250 (I-P)—~~2014~~ (2020)	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 (2020)	Performance Rating of Unitary Air-conditioning and Air-source Heat Pump Equipment	IECC®
340/360—~~2019~~ 2022	Performance Rating of Commercial and Industrial Unitary Air-conditioning and Heat Pump Equipment	IECC®
390 (I-P)—~~2003~~ 2021	Performance Rating of Single Package Vertical Air-conditioners and Heat Pumps	IECC®
440 (I-P)—~~2008~~ 2019	Performance Rating of Room Fan Coils ~~—with Addendum 1~~	IECC®
550/590 (I-P)—~~2018~~ 2022	Performance Rating of Water-chilling and Heat Pump Water-heating Packages Using the Vapor Compression Cycle	IECC®
560—~~2018~~ 2000	Absorption Water Chilling and Water Heating Packages	IECC®
700—~~2017~~ 2019	~~with Addendum 1:~~ Specifications for Refrigerants	IMC
910 (I-P)—2014	Performance Rating of Indoor Pool Dehumidifiers	IECC®
920 (I-P)—~~2015~~ 2020	Performance Rating of DX-Dedicated Outdoor Air System Units	IECC®

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AISC	American Institute of Steel	
Standard Reference Number	**Title**	**Referenced in Code(s):**
ANSI/AISC 341—~~16~~ 22	Seismic Provisions for Structural Steel Buildings	IBC
ANSI/AISC 360—~~16~~ 22	Specification for Structural Steel Buildings	IBC
ANSI/AISC 358—~~16/s1—18~~ 22	Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications, ~~IncludingSupplement 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~~ 2022	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. 09/18)~~ 22	Test Method for High Velocity Wind Driven Rain Resistant Louvers	IMC

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ANSI/AMCA 220—~~19~~ 21	Laboratory Methods of Testing Air Curtain Units for Aerodynamic Performance Rating	IECC®	
ANSI/AMCA 230—~~15~~ 23	Laboratory Methods of Testing Air Circulating Fans for Rating and Certification	IMC	IECC®
ANSI/AMCA 540—~~13~~ 23	Test Method for Louvers Impacted by Wind Borne Debris	IBC	
ANSI/AMCA 210-ANSI/ASHRAE 51—~~16~~ 23	Laboratory Methods of Testing Fans for Aerodynamic Performance Rating	IRC®	
ANSI/AMCA 210—16/ANSI/ASHRAE 51—16	Laboratory Methods of Testing Fans for Aerodynamic Performance Rating	IMC	

ANSI	**American National Standards Institute**			
Standard Reference Number	**Title**	**Referenced in Code(s):**		
~~ANSI LC 4/CSA 6.32—2012~~ CSA/ANSI LC 4:23/CSA 6.32:23	Press-connect Metallic Fittings and valves for Use in Fuel Gas Distribution Systems	IFGC	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	IRC®
~~LC1/CSA 6.26—2016~~ CSA/ANSI LC 1:19/CSA 6.26:19	Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST)	IFGC	IRC®	
ANSI Z21.41 (R2019)/CSA 6.9-~~2014~~ (R2019)	Quick Disconnect Devices for Use with Gas Fuel Appliances	IFGC	IRC®	
ANSI Z21.22—~~99 (R2003)~~ 2015 (R2020)/CSA 4.4-2015(R2020)	Relief Valves for Hot Water Supply Systems~~ with Addenda Z21.22a—2000 (R2003) and Z21.22b—2001 (R2003)~~	IPC	IRC®	
ANSI Z21.24 -2015(R2020)/CSA 6.10— 2015(R2020)	Connectors for Gas Appliances	IFGC	IRC®	
ANSI Z21.40.1-1996 (R2017)/CGA 2.91—~~1996~~ M96(R2017)	Gas-fired Heat Activated Air Conditioning and Heat Pump ~~Appliances~~	IFGC	IRC	

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ANSI Z21.50 :19/CSA 2.22—~~2016~~ :19	Vented Decorative Gas Fireplaces	IFGC		IRC®
ANSI Z21.69 -2015 (R2020)/CSA 6.16—2015 (R2020)	Connectors for Movable Gas Appliances	IFGC		IRC®
ANSI Z21.75 -2016/CSA 6.27—2016 (R2020)	Connectors for Outdoor Gas Appliances and Manufactured Homes	IFGC		IRC®
ANSI Z83.11 -2016 (R2021)/CSA 1.8—2016 (R2021)	Gas Food Service Equipment	IFGC		
ANSI Z83.18—2017 (R2021)	Recirculating Direct Gas-fired Heating and Forced Ventilation Appliances for Commercial and Industrial Applications	IFGC		
CSA/ANSI Z21.11.2—~~2016~~ :19	Gas-fired Room Heaters—Volume II—Unvented Room Heaters	IFGC		IRC®
CSA/ANSI Z21.56 :19/CSA 4.7—~~17~~ :19	Gas-fired Pool Heaters	IFGC	ISPSC	IRC®
CSA/ANSI Z21.10.3 :19/CSA 4.3—~~2017~~ :19	Gas Water Heaters—Volume III—Storage, Water Heaters with Input Ratings above 75,000 Btu per Hour, Circulating and Instantaneous	IFGC	IECC®	IRC®
CSA/ANSI Z21.15 :22/CSA 9.1—~~09(R2014)~~ :22	Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves	IFGC		IRC®
CSA/ANSI Z21.19 :19/CSA 1.4—~~2014~~ :19	Refrigerators Using Gas Fuel	IFGC		
CSA/ANSI Z21.42—~~20~~13 (R2018)	Gas-fired Illuminating Appliances	IFGC		IRC®
CSA/ANSI Z21.47 :21/CSA 2.3—~~16~~ :21	Gas-fired Central Furnaces	IECC®		
CSA/ANSI Z21.58 :22/CSA 1.6—~~2015~~ :22	Outdoor Cooking Gas Appliances	IFGC		IRC®
CSA/ANSI Z21.80 :19CSA 6.22—~~11(R2016)~~ :19	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~~ 19	American National Standard Specifications for Dry-set ~~Portland~~ Cement Mortar	IBC	IRC®
A118.3—~~20~~ 21	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~~ 19	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 Standard Cement Grouts for Tile Installation	IBC	
A136.1—~~19~~ 20	American National Standard Specifications for Organic Adhesives for ~~the~~ Installation of Ceramic Tile	IBC	IRC®
A137.1—~~19~~ 22	American National Standard Specifications for Ceramic Tile	IBC	IRC®
A137.3—~~17~~ 22	American National Standard Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panel/Slabs	IBC	
ANSI E1.21—~~2013~~ 2020	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®

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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	Product Standard for Structural Glued-laminated Timber	IRC®

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ANSI/APA A190.1—~~2017~~ 2022	Product Standard for Structural Glued Laminated Timber	IBC
ANSI/APA PRR 410—~~16~~ 2021	Standard for Performance-Rated Engineered Wood Rim Boards	IBC
ANSI/APA PRR 410—~~2016~~ 2021	Standard for Performance-rated Engineered Wood Rim Boards	IRC®
ANSI/APA PRS 610.1—~~2018~~ 2023	Standard for Performance-Rated Structural Insulated Panels in Wall Applications	IRC®
APA PDS Supplement 1—~~12~~ 23	Design and Fabrication of Plywood Curved Panels ~~(revised 2013)~~	IBC
APA PDS Supplement 2—~~12~~ 23	Design and Fabrication of Plywood-lumber Beams ~~(revised 2013)~~	IBC
APA PDS Supplement 3—~~12~~ 23	Design and Fabrication of Plywood Stressed-skin Panels ~~(revised 2013)~~	IBC
APA PDS Supplement 4—~~12~~ 23	Design and Fabrication of Plywood Sandwich Panels ~~(revised 2013)~~	IBC
APA PDS Supplement 5—~~16~~ 23	Design and Fabrication of All-plywood Beams ~~(revised 2013)~~	IBC
APA T300—~~16~~ 23	Glulam Connection Details	IBC
APA X440—~~17~~ 23	Product Guide: Glulam	IBC
APA X450—~~18~~ 23	Glulam in Residential Construction—Building—Construction Guide	IBC
API	**American Petroleum Institute**	
Standard Reference Number	**Title**	**Referenced in Code(s):**
~~Publ~~ RP 2028 ~~3rd~~ 4th Edition—~~(2002, R2010)~~ (2024)	Flame Arrestors in Piping Systems	IFC
~~Publ~~ RP 2009—~~7th~~ 8th Edition ~~(2002, R2012)~~ (2022)	Safe Welding and Cutting Practices in Refineries, Gas Plants and Petrochemical Plants	IFC

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Publ 2201 ~~5th~~ 6th Edition~~—(2003, R2010)~~ (2023)	Procedures for Welding or Hot Tapping on Equipment in Service	IFC
RP 1604—3rd Edition ~~(1996 R2010)~~ (1996) (4th edition 2021)	Closure of Underground Petroleum Storage Tanks	IFC
RP 1615—(1996) (6th Edition R2020) ~~(2011)~~	Installation of Underground-petroleum Storage Systems	IFC
RP 2001—~~9th~~ 10th Edition ~~(2012)~~ (2022)	Fire Protection in Refineries~~, 8th Edition~~	IFC
RP 2003—~~8th~~ 9th Edition ~~(2015)~~ (2023)	Protection Against Ignitions Arising out of Static, Lightning and Stray Currents	IFC
RP 2023—~~3rd~~ 4th Edition ~~(2001, R2006)~~ (2023)	Guide for Safe Storage and Handling of Heated Petroleum-derived Asphalt Products and Crude-oil Residue	IFC
RP 651—~~4th~~ 5th Edition ~~(2014)~~ (2022)	Cathodic Protection of Aboveground Petroleum Storage Tanks	IFC
RP 752— ~~3rd~~ 4th Edition ~~(2009)~~ (2022)	Management of Hazards Associated with Location of Process Plant Buildings, CMA Managers Guide	IFC
Std 2000~~—7th Edition (2014)~~ (7th edition R2020) 8th edition (2023)	Venting Atmosphere and Low-pressure Storage Tanks: Nonrefrigerated and Refrigerated	IFC
Std 2015~~—8th Edition 2001 (2018)~~ (2023)	Requirements for Safe Entry and Clearing of Petroleum Storage Tanks	IFC
Std 2350— ~~4th~~ 5th Edition ~~(2012)~~ (2021)	Overfill Protection for Storage Tanks in Petroleum Facilities	IFC
Std 653 Addendum 3,~~—~~5th Edition ~~(2018)~~ (2022)	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 (R2022)	Diaphragm Design of Metal-clad, Wood-frame Rectangular Buildings	IBC

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

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146~~—2011~~ 2020	~~Testing~~ Method of Test for Rating Pool Heaters	IECC®		
15~~—2019~~ 2022	Safety Standard for Refrigeration Systems	IMC	IFC	
170~~—2017~~ 2021	Ventilation of Health Care Facilities	IMC	IBC	IFC
34~~—2019~~ 2022	Designation ~~and Safety~~ Classification of Refrigerants	IMC	IRC®	
55~~—2017~~ 2020	Thermal Environmental Conditions for Human Occupancy	IECC®		
62.1~~-2019~~ 2022	Ventilation for Acceptable Air Quality	ISPSC		
62.1~~—2019~~ 2022	Ventilation for Acceptable Indoor Air Quality	IMC	IEBC	IECC®
90.1~~—2016~~ 2022	Energy Standard for Buildings Except Low-rise Residential Buildings	IMC	IECC®	
90.1~~—2019~~ 2022	Energy Standard for Buildings Except Low-rise Residential Buildings	IECC®		
90.4~~—2016~~ 2022	Energy Standard for Data Centers	IECC®		
ANSI/ASHRAE/ACCA Standard 183~~—(RA2017)~~ 2007 (RA 2020)	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~~ 2024)	Air Gap Fittings for Use with Plumbing Fixtures, Appliances and Appurtenances	IRC®
A112.1.3~~—2000 (R2020)~~ 2024	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®	
A112.18.3~~M~~—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 (R~~2018~~ 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~~ 2022/CSA B45.2—~~2020~~ 2022	Enameled Cast-iron and Enameled Steel Plumbing Fixtures	IRC®	
A112.19.2—/CSA B45.1—~~20 2020 20~~ 2021	Ceramic Plumbing Fixtures	IPC	
A112.19.2—~~2020~~ 2021/CSA B45.1—~~2020~~ 2021	Ceramic Plumbing Fixtures	IPC	IRC®
A112.19.3—2021/CSA B45.4—~~08 (R~~2021~~)~~	Stainless Steel Plumbing Fixtures	IPC	IRC®
A112.19.5—~~2021~~ 2022/CSA B45.15—~~2021~~ 2022	Flush Valves and Spuds for Water Closets, Urinals, and Tanks	IPC	IRC®
A112.19.7-~~2012~~ 2023/CSA B45.10—~~2012 (R2021)~~ 2023	Hydromassage Bathtub Systems	IRC®	
A112.19.7—CSA B45.10—~~R 2012/ 2012 (2021)~~ 2012(R2023)	Hydromassage Bathtub Systems	IPC	
A112.21.3—~~1985 (R2017)~~ 2022	Hydrants for Utility and Maintenance Use	IPC	
A112.3.4—~~2020~~ 2022/CSA B45.9 —~~20~~ 2022	Macerating Toilet Systems and Related Components	IRC®	
A112.36.2M—1991 ~~(R2017)~~ (R2022)	Cleanouts	IPC	IRC®
A112.4.14—~~2004 (R2019)~~ 2022	Manually Operated, Quarter-Turn Shutoff Valves for Use in Plumbing Systems	IPC	IRC®
A112.4.14—~~2019~~ 2022/CSA B125.14-~~19~~ 2022	Manually Operated Valves for Use in Plumbing Systems	IPC	IRC®
A112.4.1—~~2019~~ 2024	Water Heater Relief Valve Drain Tubes	IRC®	
A112.4.2—~~2020~~ 2021/CSA B45.16—~~20~~ 2021	Water Closet Personal Hygiene Devices	IPC	
A112.4.3—~~1999 (R2020)~~ 2024	Plastic Fittings for Connecting Water Closets to the Sanitary Drainage System	IPC	IRC®

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

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B1.20.3—~~1976~~ 2023	Dryseal Pipe Threads, Inch	IMC				
B16.12—~~2009 (R2019)~~ 2024	Cast Iron Threaded Drainage Fittings	IPC	IRC®			
B16.15—~~2013~~ 2023	Cast Alloy Threaded Fittings: ~~Classes 125 and 250~~	ISPSC				
B16.15—~~2018~~ 2023	Cast Alloy Threaded Fittings: ~~Classes 125 and 250~~	IMC	IPC	IRC®		
B16.18—~~2018~~ 2023	Cast Copper Alloy Solder Joint Pressure Fittings	IMC	IPC	IBC	IFC	IRC®
B16.22—~~2018~~ 2023	Wrought-Copper and Copper-Alloy Solder Joint Pressure Fittings	IMC	IPC	IBC	IFC	IRC®
B16.26—~~2018~~ 2023	Cast Copper Alloy Fittings for Flared Copper Tubes	IMC	IPC	IRC®		
B16.29—~~2017~~ 2022	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings (DWV)	IPC	IRC®			
B16.33—~~2012 (R2017)~~ 2022	Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes $^1/_2$ through 2)	IRC®				
B16.33—~~2012(2017)~~ 2022	Manually Operated Metallic Gas Valves for Use in Gas Piping Systems up to 125 psig (Sizes $^1/_2$ through 2)	IFGC				
B16.34—~~2020~~ 2023	Valves—Flanged, Threaded and Welding End	IPC	IRC®			
B16.44—~~2012 (R2017)~~ 2022	Manually Operated Metallic Gas Valves for Use in Above-ground Piping Systems up to 5 psi	IFGC	IRC®			
B16.47—~~2020~~ 2023	Large Diameter Steel Flanges: NPS 26 through NPS 60 Metric/Inch Standard	IFGC				
B16.5—~~2019~~ 2024	Pipe Flanges and Flanged Fittings: NPS $^1/_2$ through NFPS 24 Metric/Inch Standard	IFGC	IMC			

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B16.9—~~2018~~ 2023	Factory-Made Wrought Steel Buttwelding Fittings	IMC	IPC	IRC®
B20.1—~~2021~~ 2024	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~~ 2024	Hydrogen Piping and Pipelines	IFGC		
B31.1—~~2020~~ 2022	Power Piping	IFC		
B31.3—~~2020~~ 2022	Process Piping	IFGC	IBC	IFC
B31.4—~~2019~~ 2022	Pipeline Transportation Systems for Liquids and Slurries	IFC		
B31.5—~~2019~~ 2022	Refrigeration Piping and Heat Transfer Components	IMC	IPC	
B31.9—~~2020~~ 2023	Building Services Piping	IMC	IFC	
B36.10M—~~2018~~ 2023	Welded and Seamless Wrought-steel Pipe	IFGC	IRC®	
BPVC—~~2019~~ 2023	ASME Boiler and Pressure Vessel Code (Sections I, II, IV, V & VI, VIII)	IFGC	IMC	IFC	IRC®
CSD-1—~~2021~~ 2024	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~~ 2018	Siphonic Roof Drainage~~ Systems~~	IPC
ASPE/IAPMO Z1034—2015 (R2020)	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~~ 2020	Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution	IPC	
1003—~~2011~~ 2020	Performance Requirements for Water-pressure-reducing Valves for Domestic Water Distribution Systems	IRC®	
1008—~~06~~ 2020	Performance Requirements for Plumbing Aspects of Food Waste Disposer Units	IPC	
1008—~~2006~~ 2020	Performance Requirements for Plumbing Aspects of Residential Food Waste Disposer Units	IRC®	
1013—~~2017~~ 2021	Performance Requirements for Reduced Pressure Principle Backflow Prevention Assemblies ~~Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers~~	IRC®	
1015—~~2017~~ 2021	Performance Requirements for Double Check Backflow Prevention Assemblies ~~and Double Check Fire Protection Backflow Prevention Assemblies~~	IPC	IRC®
1018—~~2001~~ 2021	Performance Requirements for Trap Seal Primer Valves; Potable Water Supplied	IPC	IRC®
1019—~~2011~~ ~~(R2016)~~	~~Performance Requirements for Vacuum Breaker Wall Hydrants, Freeze Resistant, Automatic Draining Type~~ Performance Requirements for Freeze-resistant, Wall Hydrants, Vacuum Breaker, Draining Types	IPC	IRC®
1020—~~04~~ 2020	Performance Requirements for Pressure Vacuum Breaker Assembly	IPC	
1020—~~2004~~ 2020	Performance Requirements for Pressure Vacuum Breaker Assembly	IRC®	
1022—~~2017~~ 2021	Performance Requirements for Backflow Preventer for Beverage Dispensing Equipment	IPC	

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1023—~~1979~~ 2020	Performance Requirements for Electrically Heated or Cooled ~~Hot~~ Water Dispensers~~, Household storage type—Electrical~~	IRC®	
1024—~~2017~~ 2021	Performance Requirements for Dual Check Valve Type Backflow Preventers, Anti-siphon-type, Residential Applications	IPC	IRC®
1035—~~08~~ 2020	Performance Requirements for Laboratory Faucet Backflow Preventers	IPC	
1035—~~2008~~ 2020	Performance Requirements for Laboratory Faucet Backflow Preventers	IRC®	
1044—~~2015~~ 2020	Performance Requirements for Trap Seal Primer Devices—Drainage Types and Electronic Design Types	IPC	IRC®
1047—~~2011~~ 2021	Performance Requirements for Reduced Pressure Detector Fire Protection Backflow Prevention Assemblies	IPC	IRC®
1048—~~2011~~ 2021	Performance Requirements for Double Check Detector Fire Protection Backflow Prevention Assemblies	IPC	IRC®
1049—~~2009~~ 2021	Performance Requirements for Individual and Branch Type Air Admittance Valves for Chemical Waste Systems	IPC	
1050—~~2009~~ 2021	Performance Requirements for Stack Air Admittance Valves for Sanitary Drainage Systems	IPC	IRC®
1051—~~2009~~ 2021	Performance Requirements for Individual and Branch Type Air Admittance Valves for Sanitary Drainage Systems ~~fixture and Branch Devices~~	IPC	IRC®
1056—~~2013~~ 2021	Performance Requirements for Spill-Resistant Vacuum Breaker	IPC	IRC®

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1060—~~2016~~ 2020	Performance Requirements for Outdoor Enclosures for Fluid-conveying Components	IRC®		
1060—~~2017~~ 2020	Performance Requirements for Outdoor Enclosures for Fluid Conveying Components	IPC		
1061—~~2015~~ 2020	Performance Requirements for Push Fit Fittings	IMC	IPC	IRC®
1062—~~2017~~ 2021	Performance Requirements for Temperature Actuated, Flow Reduction (TAFR) Valves to Individual Supply Fittings	IPC	IRC®	
1064—~~2006 (R2011)~~ 2020	Performance Requirements for Backflow Prevention Assembly Field Test Kits	IPC		
1069—~~05~~ 2020	Performance Requirements for Automatic Temperature Control Mixing Valves	IPC		
1071—~~2012~~ 2021	~~Performance Requirements for~~ Temperature Actuated Mixing Valves for Plumbed Emergency Equipment	IPC		
1072—~~07~~ 2020	Performance Requirements for Barrier Type Floor Drain Tap Seal Protection Devices	IPC		
1072—~~2007~~ 2020	Performance Requirements for Barrier-type Trap Seal Protection for Floor Drain s ~~Trap Seal Protection Devices~~	IRC®		
1079—~~2005~~ 2021	Performance Requirements for Dielectric Pipe Unions	IMC	IPC	
1081—~~2014~~ 2020	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®	

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5013—2015	~~Performance Requirements for Testing~~ Reduced Pressure Principle Backflow ~~Prevention Assembly~~ Preventers (RPA) and Reduced Pressure Principle Fire Protection Backflow Preventers (RFP)	IPC
ASSE/IAPMO 1055—~~2018~~ 2020	Performance Requirements for Chemical Dispensing Systems with Integral Backflow Protection	IPC

ASSP	American Society of Safety Professionals		
Standard Reference Number	**Title**	**Referenced in Code(s):**	
ANSI/ASSP Z359.1 -2020	The Fall Protection Code	IFGC	
ANSI/ASSE Z359.1—~~2019~~ 2020	The Fall Protection Code	IBC	
ANSI/ASSP Z359.1—~~2019~~ 2020	The Fall Protection Code	IMC	IFC

ASTM	ASTM International			
Standard Reference Number	**Title**	**Referenced in Code(s):**		
A105/A105M—~~18~~ 21	Standard Specification for Carbon Steel Forgings for Piping Applications	IMC		
A106/A106M—~~2018~~ 2019a	Specification for Seamless Carbon Steel Pipe for High-temperature Service	IFGC	IMC	IRC®
A126—04(~~2014~~ 2019)	Standard 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~~ 21	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—~~19~~ 20	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~~ 19	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service	IMC			
A240/A240M—~~17~~ 20a	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(2018)~~ /A252M-19	Specification for Welded and Seamless Steel Pipe Piles	IBC			
A254—~~2010(2018)~~ /A254M-12(2019)	Specification for Copper Brazed Steel Tubing	IFGC	IMC	IRC®	
A268/A268M—~~2010(16)~~ 20	Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service	IRC®			
A268/A268—~~2010(16)~~ 20	Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service	IFGC			
A269/A269M-15a 2019	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service	IFGC	IMC	IPC	IRC®
A307—~~2014E1~~ 21	Specification for Carbon Steel Bolts ~~and~~ Studs, and Threaded Rod 60,000 ~~psi~~ PSI Tensile Strength	IRC®			
A312/A312M— ~~2018~~ 21	Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	IPC			
A312/A312M—~~2018~~ 21	Standard Specification for Seamless, Welded and Heavily Cold Worked Austenitic Stainless Steel Pipes	IFGC	ISPSC		

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A312/A312M ~~—17~~ 21	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	IMC	
A312/A312M~~—2018~~ 21	Specification for Seamless, Welded and Heavily Cold Worked Austenitic Stainless Steel Pipes	IRC®	
A334/A334M—04a(~~2016~~ 2021)	Standard Specification for Seamless and Welded Carbon and Alloy-steel Tubes for Low-temperature Service	IMC	
A36/A36M~~—14~~ 19	Specification for Carbon Structural Steel	IBC	IRC®
A395/A395M—99(~~2014~~) 2018	Standard Specification for Ferritic Ductile Iron Pressure-retaining Castings for Use at Elevated Temperatures	IMC	
A403/A403M~~—2018A~~ 20	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	ISPSC	
A416/A416M~~—2017A~~ 18	Standard Specification for Low-Relaxation , ~~Uncoated~~ Seven-~~W~~wire Steel Strand for Prestressed Concrete	IBC	
A420/A420M~~—2016~~ 20	Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-temperature Service	IMC	
A463/A463M—15 (2020)e1	Standard Specification for Steel Sheet, Aluminum-coated, by the Hot-dip Process	IBC	IRC®
A53/A53M— ~~2018~~ 2020	Specification for Pipe, Steel, Black and Hot-dipped, Zinc-coated Welded and Seamless	IPC	
A53/A53M~~—2018~~ 2020	Specification for Pipe, Steel, Black and Hot Dipped Zinc-coated Welded and Seamless	IFGC	IMC IRC®
A536—84~~(2014)~~ (2019)e1	Standard Specification for Ductile Iron Castings	IMC	
A563/A563M~~—15~~ 21a	Standard Specification for Carbon and Alloy Steel Nuts	IRC®	

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A572/A572M—~~2018~~ 21e1	Specification for High-strength Low-alloy Columbium-Vanadium Structural Steel	IBC	
A588/A588M—~~15~~ 19	Standard Specification for High-~~s~~Strength Low-~~a~~ Alloy Structural Steel , ~~with~~ up to 50 ksi ~~(~~ [345 MPa~~)~~] Minimum Yield Point with Atmospheric Corrosion Resistance	IBC	
A6/A6M—~~2017A~~ 2019	Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes and Sheet Piling	IBC	
A615/A615M—~~15ae1~~ 20	StandardSpecification for Deformed and Plain Carbon-~~s~~ Steel Bars for Concrete Reinforcement	IBC	
A615/A615M—~~2015aE1~~ 20	Standard Specification for Deformed and Plain Carbon- s Steel Bars for Concrete Reinforcement	IRC®	
A641/A641M—~~09a(2014)~~ 19	Specification for Zinc-coated (Galvanized) Carbon Steel Wire	IRC®	
A653/A653M—~~2017~~ 2020	Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-iron Alloy-coated (Galvannealed) by the Hot-dip Process	IRC®	
A653/A653M—~~2017~~ 2020	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— ~~17~~ 2021	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—~~2016E1~~ 18	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/A755M—~~2016E1~~ 18	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— 16(2021)	Specification for Welded Unannealed Austenitic Stainless Steel Tubular Products	IPC	
A778M/A778M—~~20~~16 (2021)	Specification for Welded Unannealed Austenitic Stainless Steel Tubular Products	IRC®	
A792/A792M—~~10(2015)~~ 21a	Specification for Steel Sheet, 55% Aluminum-zinc Alloy-coated by the Hot-dip Process	IBC	IRC®
A875/A875M—~~13~~ 21	Standard Specification for Steel Sheet, Zinc-5%, Aluminum Alloy-coated by the Hot-dip Process	IBC	IRC®
A888— ~~2018~~ 21a	Specification for Hubless Cast-iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Application	IPC	IRC®
A924/A924M—~~2017A~~ 20	Standard Specification for General Requirements for Steel Sheet, Metallic-coated by the Hot-dip Process	IBC	
A924M—~~2017A~~ 20	Standard Specification for General Requirements for Steel Sheet, Metallic-coated by the Hot-dip Process	IRC®	
B101—12(2019)	Specification for Lead-coated Copper Sheet and Strip for Building Construction	IBC	IRC®
B152/B152M—~~13~~ 19	Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar	IPC	
B209—~~14~~ 21	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~~ 20	Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service	IFGC	IMC	IFC	IRC	IBC		
B306—~~13~~ 20	Specification for Copper Drainage Tube (DWV)	IPC				IRC®		
B32—~~08(2014)~~ 20	Specification for Solder Metal	IMC		IPC		IRC®		
B370—12(2019)	Specification for Copper Sheet and Strip for Building Construction	IBC				IRC®		
B42—~~15a~~ 20	Specification for Seamless Copper Pipe, Standard Sizes	IMC	IPC	IFC	IRC	IBC		
B43—~~15~~ 20	Specification for Seamless Red Brass Pipe, Standard Sizes	IMC	IPC	IBC	IFC	IRC®		
B447—12a(2021)	Specification for Welded Copper Tube	IPC		ISPSC		IRC®		
B68/B68M—~~11~~ 19	Standard Specification for Seamless Copper Tube, Bright Annealed ~~(Metric)~~	IMC		IBC		IFC		
B75/B75M—~~11~~ 20	Specification for Seamless Copper Tube	IMC		IPC		IRC®		
B819—~~2018~~ 19	Standard Specification for Seamless Copper Tube for Medical Gas Systems	IMC						
B88—~~2016~~ 20	Specification for Seamless Copper Water Tube	IFGC	IMC	IPC	IBC	IFC	ISPSC	IRC®
C1002—~~2018~~ 20	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)~~ 20	Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories	IBC						

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C1029—~~15~~ 20	Specification for Spray-applied Rigid Cellular Polyurethane Thermal Insulation	IBC		IRC®
C1047—~~14a~~ 19	Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base	IRC®		
C1063—~~2018B~~ 21	Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-based Plaster	IBC		IRC®
C1088—~~2018~~ 20	Specification for Thin Veneer Brick Units Made from Clay or Shale	IBC		IRC®
C1107/C1107M—~~2017~~ 20	Standard Specification for Packaged Dry, Hydraulic-cement Grout (Nonshrink)	IRC®		
C1157/C1157M—~~2017~~ 20a	Standard Performance Specification for Hydraulic Cement	IBC		
C126—~~2017~~ 19	Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	IRC®		
C1277—~~2018~~ 20	Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings	IPC	IPSDC	IRC®
C1280—~~13a~~ 18	Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing	IBC		
C1283—2015(2021)	Practice for Installing Clay Flue Lining	IBC		IRC®
C1288—2017	Standard Specification for ~~Discrete Nonasbestos~~ Fiber-~~c~~ Cement Interior Substrate Sheets	IBC		IRC®
C1289—~~2018~~ 21	Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board	IBC		IRC®
C1313/C1313M—13(2019)	Standard Specification for Sheet Radiant Barriers for Building Construction Applications	IBC		

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

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C1461— ~~2008(2017)~~ 21	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~~ 20	Specification for Nonreinforced Concrete Sewer, Storm Drain and Culvert Pipe	IPC	IRC®
C150/C150M—~~2018~~ 21	Specification for Portland Cement	IBC	IRC®
C1540— ~~2018~~ 20	Specification for Heavy Duty Shielded Couplings Joining Hubless Cast-iron Soil Pipe and Fittings	IPC	
C1563— 2008~~(201 7)~~ (2021)	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)~~ (2020)	Standard Test Method for Wind Resistance of Concrete and Clay Roof Tiles (Mechanical Uplift Resistance Method)	IBC	
C1600/C1600M—~~2017~~ 19	Standard Specification for Rapid Hardening Hydraulic Cement	IBC	
C1629/C1629M—~~2018A~~ 19	Standard Classification for Abuse-resistant Nondecorated Interior Gypsum Panel Products and Fiber-reinforced Cement Panels	IBC	
C1634—~~2017~~ 20	Standard Specification for Concrete Facing Brick and Other Concrete Masonry Facing Units	IRC®	
C1658/C1658M—~~2018~~ 19e1	Standard Specification for Glass Mat Gypsum Panels	IBC	IRC®
C1668—~~13a~~ 20	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~~ 2021a	Standard Specification for Adhered Manufactured Stone Masonry Veneer Units	IRC®			
C1670/C1670M—~~2018~~ 21a	Standard Specification for Adhered Manufactured Stone Masonry Veneer Units	IBC			
C1766—2015(2019)	Standard Specification for Factory-laminated Gypsum Panel Products	IBC	IRC®		
C1788—~~14~~ 20	Standard Specification for Non Metallic Plaster Bases (Lath) Used with Portland Cement Based Plaster in Vertical WallApplications	IBC			
C208—2012(2017)~~E1~~ e2	Specification for Cellulosic Fiber Insulating Board	IBC	IRC®		
C212—~~2017~~ 21	Standard Specification for Structural Clay Facing Tile	IRC®			
C216—~~2017A~~ 21	Specification for Facing Brick (Solid Masonry Units Made from Clay or Shale)	IBC	IRC®		
C22/C22M—00~~(2015)~~ (2021)	Specification for Gypsum	IBC	IRC®		
C270—~~14A~~ 19ae1	Specification for Mortar for Unit Masonry	IRC®			
C28/C28M—10~~(2015)~~ 2020	Specification for Gypsum Plasters	IBC	IRC®		
C31/C31M—~~2018B~~ 21a	Practice for Making and Curing Concrete Test Specimens in the Field	IBC			
C315—2007~~(2016)~~ (2021)	Specification for Clay Flue Liners and Chimney Pots	IFGC	IMC	IBC	IRC®
C317/C317M—2000 ~~(2015)~~ (2019)	Specification for Gypsum Concrete	IBC			
C34—2017	Standard Specification for Structural Clay ~~Load-bearing~~ Loadbearing Wall Tile	IRC®			

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C35/C35M—~~(2014)~~ 01(2019)	Specification for Inorganic Aggregates for Use in Gypsum Plaster	IRC®		
C35/C35—01~~(2014)~~ (2019)	Specification for Inorganic Aggregates for Use in Gypsum Plaster	IBC		
C411—~~2017~~ 2019	Test Method for Hot-surface Performance of High-temperature Thermal Insulation	IMC	IRC®	
C425— ~~2004(2018)~~ 21	Specification for Compression Joints for Vitrified Clay Pipe and Fittings	IPC	IPSDC	IRC
C443— ~~2012(2017)~~ 20	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	IPC		
C443—~~2012(2017)~~ 20	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets	IRC®		
C472—~~99(2014)~~ 20	Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete	IBC		
C473—~~2017~~ 2019	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~~ 2020	Specification for Grout for Masonry	IRC®		
C503M/C503M—2015	Standard Specification for Marble Dimension Stone	IRC®		
C514—04~~(2014)~~ (2020)	Specification for Nails for the Application of Gypsum Board	IBC	IRC®	
C516—~~2008(2014)E1~~ 19	Specifications for Vermiculite Loose Fill Thermal Insulation	IBC		

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C547—~~2017~~ 19	Specification for Mineral Fiber Pipe Insulation	IBC	
C549—~~06(2012)~~ 18	Specification for Perlite Loose Fill Insulation	IBC	
C552—~~2017E1~~ 21a	Standard Specification for Cellular Glass Thermal Insulation	IBC	IRC®
C564—~~14~~ 20a	Specification for Rubber Gaskets for Cast-iron Soil Pipe and Fittings	IPC	IRC®
C578—~~2018~~ 19	Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation	IBC	IRC®
C59/C59M—00~~(2015)~~ (2020)	Specification for Gypsum Casting Plaster and Molding Plaster	IBC	IRC®
C595/C595M—~~2018~~ 21	Specification for Blended Hydraulic Cements	IBC	IRC®
C61/C61M—00~~(2015)~~ (2020)	Specification for Gypsum Keene's Cement	IBC	IRC®
C631—09~~(2014)~~ 2020	Specification for Bonding Compounds for Interior Gypsum Plastering	IBC	IRC®
C636/C636M—~~13~~ 19	Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels	IBC	
C652—~~2017A~~ 21	Specification for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)	IBC	IRC®
C67/C67M—~~2018~~ 21	Test Methods of Sampling and Testing Brick and Structural Clay Tile	IBC	
C754—~~2018~~ 20	Specification for Installation of Steel Framing Members to Receive Screw-attached Gypsum Panel Products	IBC	
C76—~~2018A~~ 20	Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe	IPC	

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C76—~~2018A~~ 20	Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe	IPC	IPSDC	IRC®
C840—~~2018A~~ 20	Specification for Application and Finishing of Gypsum Board	IBC		
C842—05~~(2015)~~ (2021)	Specification for Application of Interior Gypsum Plaster	IBC		IRC®
C844—2015 (2021)	Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster	IBC		IRC®
C847—~~14a~~ 2018	Specification for Metal Lath	IBC		
C887—~~13~~ 20	Specification for Packaged, Dry Combined Materials for Surface Bonding Mortar	IBC		IRC®
C897—15 (2020)	Specification for Aggregate for Job-mixed Portland Cement-based Plaster	IBC		IRC®
C926—~~2018B~~ 20b	Specification for Application of Portland Cement-based Plaster	IBC		IRC®
C932—06~~(2013)~~ (2019)	Specification for Surface-applied Bonding Compounds for Exterior Plastering	IBC		
C94/C94M—~~17A~~ 21b	Specification for Ready-mixed Concrete	IEBC		
C94/C94M—~~2017A~~ 21b	Specification for Ready-mixed Concrete	IBC		IRC®
C956—04~~(2015)~~ (2019)	Specification for Installation of Cast-in-place Reinforced Gypsum Concrete	IBC		
D1003—~~13~~ 21	Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics	IECC®		
D1143/D1143M—~~2007(2013)E1~~ 20	Standard Test Methods for Deep Foundations~~~~ Elements Under Static Axial Compressive Load	IBC		

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D1227—13(2019)e1	Specification for Emulsified Asphalt Used as a Protective Coating for Roofing	IBC	IRC®
D1557—12~~e1~~ (2021)	Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort [56,000 ft-lb/ft^3 (2,700 kN m/m^3)]	IBC	
D1593—~~13~~ 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~~ Classification System and Basis for Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds	IRC®	
D1785— ~~2015E1~~ 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—~~16~~ 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®	

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

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D2683—~~14~~ 20	Specification for Socket-type Polyethylene Fittings for Outside Diameter-controlled Polyethylene Pipe and Tubing	IMC	IPC	IRC®
D2737—~~12a~~ 21	Standard Specification for Polyethylene (PE) Plastic Tubing	IMC	IPC	IBC
D2822/D2822M—2005(2011)e1	Specification for Asphalt Roof Cement, Asbestos Containing	IBC		IRC®
D2843—~~16~~ 19	Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics	IBC		
D2846/D2846M— ~~2017BE1~~ 19a	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~~ 2020	~~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	IPC		
D2859—2016	Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials	IBC		
D2859—~~16~~ 2016(2021)	Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials	IFC		
D2949—~~10~~ 18	Specification for 3.25-in. Outside Diameter Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	IPC		IRC®
D3035—~~15~~ 21	Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter	IMC	IPC	IRC®

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D312/D312M—2016~~M~~ 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)~~ 19	Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	IPC		
D3161/D3161M—~~2016A~~ 20	Test Method for Wind Resistance of Steep Slope Roofing Products (Fan Induced Method)	IBC	IRC®	
D3201/D3201M—~~13~~ 20	Test Method for Hygroscopic Properties of Fire-retardant-treated Wood and Wood-based Products	IBC	IRC®	
D3212—~~07(2013)~~ 20	Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals	IPC	IRC®	
D323—~~15A~~ 20a	Test Method for Vapor Pressure of Petroleum Products (Reid Method)	IFC		
D3278—~~96(2011)~~ 21	Test Methods for Flash Point of Liquids by Small Scale Closed-cup Apparatus	IMC	IBC	IFC
D3350—~~14~~ 21	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—~~10A~~ 19	Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules	IRC®		
D3468/D3468M—99~~(2013)E1~~ (2020)	Specification for Liquid-applied Neoprene and Chlorosulfanated Polyethylene Used in Roofing and Waterproofing	IBC	IRC®	

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D3498—~~03(2011)~~ 19a	~~Standard Specification for Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems~~ Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing	IBC	
D3679—~~2017~~ 21	Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding	IBC	IRC®
D3957—2009~~(2015)~~ (2020)	Standard Practices for Establishing Stress Grades for Structural Members Used in Log Buildings	IBC	
D4434/D4434M—~~2015~~ 21	Specification for Poly (Vinyl Chloride) Sheet Roofing	IBC	IRC®
D449/D449M—~~03(2014)E1~~ 2003(2021)	Specification for Asphalt Used in Dampproofing and Waterproofing	IRC®	
D4601/D4601M—04~~(2012)e1~~ (2020)	Specification for Asphalt-coated Glass Fiber Base Sheet Used in Roofing	IBC	IRC®
D4829—~~11~~ 21	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)~~ (2020)	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~~ 2019e1	Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-joists	IBC	IRC®
D5456—~~2018~~ 21e1	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~~ 21	Test Method for Flash Point by Tag Closed Cup Tester	IFC	
D5726—98~~(2013)~~ (2020)	Specification for Thermoplastic Fabrics Used in Hot-applied Roofing and Waterproofing	IBC	IRC®
D6083/D6083M—~~2018~~ 21	Specification for Liquid Applied Acrylic Coating Used in Roofing	IBC	IRC®
D6305—~~08(2015)E1~~ 21	Practice for Calculating Bending Strength Design Adjustment Factors for Fire-retardant-treated Plywood Roof Sheathing	IRC®	
D635—~~14~~ 18	Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position	IBC	
D6841—~~2016~~ 21	Standard Practice for Calculating Design Value Treatment Adjustment Factors for Fire-retardant Treated Lumber	IBC	IRC®
D6878/D6878M—~~2017~~ 19	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing	IBC	IRC®
D7147—~~2011(2018)~~ 21	Specification for Testing and Establishing Allowable Loads of Joist Hangers	IBC	
D7158/D7158M—~~2019~~ 20	Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method)	IBC	IRC®
D7254—~~2017~~ 20	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—~~14E1~~ 19	Standard Specification for Evaluating Structural Capacities of Rim Board Products and Assemblies	IBC	IRC®

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

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E1918~~—06(2016)~~ 21	Standard Test Method for Measuring Solar Reflectance of Horizontal or Low-sloped Surfaces in the Field	IECC®		
E1966—15(2019)	Standard Test Method for Fire-resistant Joint Systems	IFC	IBC	
E1980—11(2019)	Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-sloped Opaque Surfaces	IECC®		
E1996~~—2017~~ 20	Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes	IBC	IRC®	
E2174~~—2018~~ 20a	Standard Practice for On-site Inspection of Installed Fire Stops	IBC		
E2178~~—13~~ 21a	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~~—2013~~ 21a	Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permanence of Building Materials	IECC®	IRC®	
E2231~~—2018~~ 19	Standard Practice for Specimen Preparation and Mounting of Pipe and Duct Insulation Materials to Assess Surface Burning Characteristics	IMC	IRC®	
E2307~~—15BE1~~ 20	Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using the Intermediate-scale, Multistory Test Apparatus	IBC		
E2336~~—16~~ 20	Standard Test Methods for Fire Resistive Grease Duct Enclosure Systems	IMC		
E2353~~—2016~~ 21	Standard Test Methods for Performance of Glazing in Permanent Railing Systems, Guards and Balustrades	IBC		

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E2393—~~10a(2015)~~ 20a	Standard Practice for On-site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers	IBC	
E2570/E2570M—07~~(2014)E1~~ (2019)	Standard Test Methods for Evaluating Water-resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage	IRC®	
E2573—~~17~~ 19	Standard Practice for Specimen Preparation and Mounting of Site-fabricated Stretch Systems to Assess Surface Burning Characteristics	IFC	
E2579—~~15~~ 21	Standard Practice for Specimen Preparation and Mounting of Wood Products to Assess Surface Burning Characteristics	IFC	IBC
E2652—~~16~~ 18	Standard Test Method for ~~Behavior~~ Assessing Combustibility of Materials Using ~~in~~ a Tube Furnace with a Cone-shaped Airflow Stabilizer at 750°C	IBC	
E283/E283M—~~04(2012)~~ 19	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—~~17~~ 19a	Standard Specification for Manufactured Polymeric Drainage and Ventilation Materials Used to Provide a Rainscreen Function	IBC	IRC®
E3082—~~17~~ 20	Standard Test Methods for Determining the Effectiveness of Fire-retardant Treatments for Natural Christmas Trees	IFC	

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E336—~~17a~~ 20	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—~~93(2015)e1~~ 19	Test Method for Thickness and Density of Sprayed Fire-resistive Material (SFRM) Applied to Structural Members	IBC	
E648—~~17a~~ 19ae1	Standard Test Method for Critical Radiant Flux of Floor-covering Systems Using a Radiant Heat Energy Source	IFC	
E736/E736M—~~2017~~ 19	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)~~ 19	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	IECC®	
E84—~~18b~~ 21a	Standard Test Method for Surface Burning Characteristics of Building Materials	IFC	
E903—~~2012~~ 20	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~~ 19	Standard Specification for Mattress and Box Springs for Use in Berths in Marine Vessels	IFC	
F1361—~~2017~~ 21	Standard Test Method for Performance of Open ~~Deep Fat~~ Vat Fryers	IECC®	

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F1476—07~~(2013)~~ (2019)	Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications	IMC	IPC
F1488—~~14E1~~ 14(2019)	Specification for Coextruded Composite Pipe	IRC®	
F1495—~~2014a~~ 20	Standard Specification for Combination Oven Electric or Gas Fired	IECC®	
F1496—~~2013~~ 13(2019)	Standard Test Method for Performance of Convection Ovens	IECC®	
F1504—~~2014~~ 21	Standard Specification for Folded Poly (Vinyl Chloride) (PVC) for Existing Sewer and Conduit Rehabilitation	IRC®	
F1554—~~2018~~ 20	Specification for Anchor Bolts, Steel, 36, 55 and 105-ksi Yield Strength	IRC®	
F1667—~~2018~~ 21	Specification for Driven Fasteners: Nails, Spikes and Staples	IBC	IRC®
F1696—~~2018~~ 20	Standard Test Method for Energy Performance of Stationary-Rack, Door-Type Commercial Dishwashing Machines	IECC®	
F1807— ~~2018~~ 19b	Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring, or Alternate Stainless Steel Clamps, for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	IPC	
F1871—~~2011~~ 20	Standard Specification for Folded/Formed Poly (Vinyl Chloride) Pipe Type A for Existing Sewer and Conduit Rehabilitation	IRC®	
F1920—~~2015~~ 20	Standard Test Method for Performance of Rack Conveyor Commercial Dishwashing Machines	IECC®	

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F1924—~~12~~ 19	Standard Specification for Plastic Mechanical Fittings for Use on Outside Diameter Controlled Polyethylene Gas Distribution Pipe and Tubing	IMC			IRC®
F1960— ~~2018~~ 21	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	IPC			
F1970— ~~2018~~ 19	Special Engineered Fittings, Appurtenances or Valves for Use in Poly (Vinyl Chloride) (PVC) OR Chlorinated Poly (Vinyl Chloride) (CPVC) Systems	IPC			
F1974—09~~(2015)~~ (2020)	Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Cross-linked Polyethylene/ Aluminum/Cross-linked Polyethylene Composite Pressure Pipe	IPC			IRC®
F2006—~~17~~ 21	Standard/Safety Specification for Window Fall Prevention Devices for Nonemergency Escape (Egress) and Rescue (Ingress) Windows	IBC	IEBC		IFC
F2080— ~~2016~~ 2019	~~Specifications for Cold-expansion Fittings with Metal Compression-sleeves for Cross-linked Polyethylene (PEX) Pipe~~ Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Crosslinked Polyethylene (PEX) Pipe and SDR9 Polyethylene of Raised Temperature (PE-RT) Pipe	IMC	IPC		IRC
F2090—~~17~~ 21	Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms	IBC	IEBC	IFC	IRC®
F2098— ~~2015~~ 2018	Standard Specification for Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) to Metal Insert and Plastic Fittings	IPC			

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

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F2561—~~17~~ 20	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—~~16~~ 20	Standard Practice for The Sectional Repair of Damaged Pipe by Means of an Inverted Cured-in-Place Liner	IPC		
F2623—~~14~~ 19	Standard Specification for Polyethylene of Raised Temperature (PE-RT) Systems for Non-Potable Water Applications ~~SDR9 Tubing~~	IMC	IRC®	
F2648/F2648M— ~~2017~~ 20	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)~~ 21	Standard Specification for Plastic Insert Fittings for SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	IPC		
F2764/F2764M— ~~2018~~ 19	~~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	Standard Specification for Polyethylene or Raised Temperature (PE-RT) Plastic Hot- and Cold-water Tubing and Distribution Systems	IMC	IPC	IRC
F2806—~~10(2015)~~ 20	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe (Metric SDR-PR)	IMC	IRC®	

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F2831— ~~2012(2017)~~ 19	Standard Practice for Internal Non Structural Epoxy Barrier Coating Material Used in Rehabilitation of Metallic Pressurized Piping Systems	IPC			
F2855—~~12~~ 19	Standard Specification for Chlorinated Poly(Vinyl Chloride)/Aluminum/Chlorinated Poly(Vinyl Chloride) (CPVC-AL-CPVC) Composite Pressure Tubing	IMC	IPC	IRC®	
F2861—~~2017~~ 20	Standard Test Method for Enhanced Performance of Combination Oven in Various Modes	IECC®			
F2881 /F2881M— ~~2018~~ 21	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~~ 19	Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems	IPC	IRC®		
F3240—~~17~~ 19e1	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~~ 19	Standard Specification for Crosslinked Polyethylene (PEX) Tubing with Oxygen Barrier for Hot- and Cold-water Hydronic Distribution Systems	IMC	IRC®		
F437—~~15~~ 21	Specification for Threaded Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	IMC	IPC	ISPSC	IRC®

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F439—~~13~~ 19	Specification for Socket Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	IMC	IPC	ISPSC	IRC®
F441/F441M—~~15~~ 20	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	IMC	IPC	IRC®	
F442/F442M—~~13E1~~ 20	Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)	IRC®			
F477—14(2021)	Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe	IPC	IRC®		
F493—~~14~~ 20	Specification for Solvent Cements for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe and Fittings	IMC	IPC	IRC®	
F656— ~~2015~~ 21	Specification for Primers for Use in Solvent Cement Joints of Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings	IPC			
F667 /F667M — ~~20~~16 (2021)	Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings	IPC			
F714—~~13~~ 21a	Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter	IMC	IRC®		
F844—~~07a(2013)~~ 19	Standard Specification for Washers, Steel, Plain (Flat), Unhardened for General Use	IRC®			
F876— ~~2017~~ 20b	Specification for Cross-linked Polyethylene (PEX) Tubing	IPC			
F876—2018A	Specification for Cross-linked Polyethylene (PEX) Tubing	IMC			
F877— ~~2018A~~ 20	Specification for Cross-linked Polyethylene (PEX) Hot- and Cold-water Distribution Systems	IPC			

G152—13(2021)	Practice for Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials	IBC
G154—2016~~A~~	Standard Practice for Operating Fluorescent Ultraviolet (UV) ~~Light~~ Lamp Apparatus for ~~UV~~ Exposure of Nonmetallic Materials	IBC
G155—~~13~~ 21	Standard Practice for Operating Xenon Arc ~~Light~~ Lamp Apparatus for Exposure of ~~Nonmetallic~~ Materials	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	Standard for the Handling, Storage, Field Fabrication, and Field Treatment of ~~Care~~ of Preservative-treated Wood Products	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-AMD1~~ :2019	Specifications for Filler Metals for Brazing and Braze Welding	IMC

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A5.8M/A5.8~~—2011-AMD1~~ :2019	Specifications for Filler Metals for Brazing and Braze Welding	IPC
A5.8M/A5.8~~—2011—AMD1~~ :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~~—12~~ 21	~~Standard for~~ Ductile Iron & Gray Iron Fittings	IMC	IPC	IRC®
C115/A21.15~~—11~~ 20	~~Standard for~~ Flanged Ductile-iron Pipe with Ductile Iron or Grey-iron Threaded Flanges	IMC	IPC	IRC®
C153/A21.53~~—11~~ 19	Ductile-iron Compact Fittings for Water Service	IMC		IRC®
C500~~—09~~ 19	Standard for Metal-seated Gate Valves for Water Supply Service	IPC		IRC®
C507~~—15~~ 18	Standard for Ball Valves, 6 In. Through 60 in. (150 mm through 1,500 mm).	IPC		IRC®
C510~~—07~~ 17	Double Check Valve Backflow Prevention Assembly	IRC®		
C652~~—11~~ 19	Disinfection of Water-storage Facilities	IPC		
C901~~—16~~ 20	Polyethylene (PE) Pressure Pipe and Tubing, 3/4 in. (19 mm) through 3 in. (76 mm) for Water Service	IMC	IPC	IRC®
C903~~—16~~ 21	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):**

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ANSI/CGA P-18—~~(2013)~~ (2018)	Standard for Bulk Inert Gas Systems	IFC	
C-7—~~(2014)~~ (2020)	Guide to Classification and Labeling of Compressed Gases	IFC	
S-1.1—~~(2011)~~ (2019)	Pressure Relief Device Standards—Part 1—Cylinders for Compressed Gases	IFGC	IFC
S-1.2—~~(2009)~~ 2019	Pressure Relief Device Standards—Part 2—Cargo and Portable Tanks for Compressed Gases	IFGC	IFC
S-1.3—~~(2008)~~ (2020)	Pressure Relief Device Standards—Part 3—Stationary Storage Containers for Compressed Gases	IFGC	IFC
V-1—~~(2013)~~ (2021)	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~~ 21	Standard Specification for Hubless Cast-iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications	IPC	IPSDC	IRC®
310—~~18~~ 20	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	IPC	IPSDC	IRC®

CPA	**Composite Panel Association**		
Standard Reference Number	**Title**	**Referenced in Code(s):**	
ANSI A135.4—2012 (R2020)	Basic Hardboard	IBC	IRC®
ANSI A135.5—2012 (R2020)	Prefinished Hardboard Paneling	IBC	IRC®
ANSI A135.6—~~2012~~ (R2020)	Engineered Wood Siding	IBC	IRC®

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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 FC1—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 FC1—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		
~~CAN/~~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~~ 2022/CSA B125.1—~~18~~ :22	Plumbing Supply Fittings	IPC	
ASME A112.18.1—~~2018~~ 2023/CSA B125.1—~~2018~~ :23	Plumbing Supply Fittings	IRC®	
ASME A112.18.2—2019/CSA B125.2—~~2019~~ 2023	Plumbing Waste Fittings	IRC®	
ASME A112.18.2—~~2015~~ 2023/CSA B125.2—~~2015~~ 2023	Plumbing Waste Fittings	IPC	
ASME A112.18.6—~~2017~~/CSA B125.6— 17(R2022)	Flexible Water Connectors	IPC	
ASME A112.19.1—~~2018~~ 2023/CSA B45.2—~~18~~ :23	Enameled Cast-iron and Enameled Steel Plumbing Fixtures	IRC®	
ASME A112.19.1—~~2020~~ 2023/CSA B45.2—~~20~~ :23	Enameled Cast-iron and Enameled Steel Plumbing Fixtures	IPC	
ASME A112.19.2—~~2018~~ 2023/CSA B45.1—~~18~~ :23	Ceramic Plumbing Fixtures	IRC®	
ASME A112.19.2—~~2020~~ :23/B45.1—~~2020~~ :23	Ceramic Plumbing Fixtures	IPC	
ASME A112.19.3—~~2017~~ 2022/CSA B45.4—~~2017~~ 22	Stainless Steel Plumbing Fixtures	IRC®	
ASME A112.19.3—~~2021~~ 2022/CSA B45.4— ~~2021~~ :22	Stainless Steel Plumbing Fixtures	IPC	
ASME A112.19.5—~~2021~~ 22/CSA B45.15—~~21~~ 22	Flush Valves and Spuds for Water Closets, Urinals and Tanks	IPC	
ASME A112.19.7—2020/CSA B45.10 :20~~1221 2012 (R20)~~	Hydromassage Bathtub Systems	IPC	

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ASME A112.3.4—~~2013~~ 2018/CSA B45.9—18 (R2023)	Macerating Toilet Systems and Related Components	IRC®		
ASME A112.3.4—2018/CSA B45.9— 2018 ~~18~~ (R2023)	Macerating Toilet Systems and Waste Pumping Systems for Plumbing Fixtures	IPC		
ASME A112.4.2—~~2020~~ 2021/CSA B45.16—~~20~~ 21	Personal Hygiene Devices for Water Closets	IPC		
ASME A112.4.2—~~2015~~ 2021/CSA B45.16—~~15~~ 21	Personal Hygiene Devices for Water-closets	IRC®		
ASME A17.1/CSA B44—~~2019~~ 2022	Safety Code for Elevators and Escalators	IRC®		
ASME A17.1—~~2019~~ 2023/CSA B44-—23	Safety Code for Elevators and Escalators	IBC		
ASME A17.7—2007/CSA B44.7 —~~07(R2017)~~ 07(R2021)	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~~ (R2022)	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	IPC	IRC®	
ASSE 1037—~~2015~~ 2020/ASME A112.1037—~~2015~~ 2020/CSA B125.37—~~15~~ :20	Performance requirements for Pressurized Flushing Devices for Plumbing Fixtures	IPC		
ASSE 1070—2020/ASME A112.1070—2020/CSA B125.~~1070~~—:20	Performance requirements for Water Temperature Limiting Devices	IPC		
ASSE 1070—~~2015~~ 2020/ASME A112.1070—~~2015~~ 2020/CSA B125.70—~~15~~ :20	Performance Requirements for Water-temperature-limiting Devices	IRC®		
B125.3—~~18~~ :23	Plumbing Fittings	IPC	IRC®	
B137.10—~~17~~ :23	Cross-linked Polyethylene/Aluminum/Cross-linked Polyethylene (PEX-AL-PEX) Composite Pressure-pipe Systems	IMC	IPC	IRC®

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B137.11—~~17~~ :23	Polypropylene (PP-R) Pipe and Fittings for Pressure Applications	IMC	IPC		IRC®
B137.18—~~17~~ :23	Polyethylene of Raised Temperature Resistance (PE-RT) Tubing Systems for Pressure Applications	IMC	IPC		IRC®
B137.1—~~17~~ : 23	Polyethylene (PE) Pipe, Tubing and Fittings for Cold-water Pressure Services	IMC	IPC		IRC®
B137.2—~~17~~ :23	Polyvinylchloride (PVC) Injection-moulded Gasketed Fittings for Pressure Applications	IMC	IPC	ISPSC	IRC®
B137.3—~~17~~ :23	Rigid ~~Poly (Vinyl Chloride)~~ polvinylchloride (PVC) Pipe and Fittings for Pressure Applications	IMC	IPC	IPSDC	ISPSC	IRC®
B137.5—~~17~~ :23	Cross-linked Polyethylene (PEX) Tubing Systems for Pressure Applications	IMC	IPC		IRC®
B137.6—~~17~~ :23	Chlorinated Polyvinylchloride (CPVC) Pipe, Tubing and Fittings for Hot- and Cold-water Distribution Systems	IMC	IPC	ISPSC	IRC®
B137.9—~~17~~ :23	Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure-pipe Systems	IMC	IPC		IRC®
B181.1—~~18~~ :21	Acrylonitrile-Butadiene-Styrene ABS Drain, Waste and Vent Pipe and Pipe Fittings	IPC	IPSDC		IRC®
B181.2—~~18~~ :21	Polyvinylchloride PVC and Chlorinated Polyvinylchloride (CPVC) Drain, Waste, and Vent Pipe and Pipe Fittings	IPC	IPSDC		IRC®
B181.3—~~18~~ :21	Polyolefin and Polyvinylidene Fluoride (PVDF) Laboratory Drainage Systems	IPC			IRC®
B182.13—~~18~~ :21	Profile Polypropylene (PP) Sewer Pipe and Fittings for Leak-proof Sewer Applications	IPC			
B182.1—~~18~~ :21	Plastic Drain and Sewer Pipe and Pipe Fittings	IPC	IPSDC		IRC®

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B182.2~~—18~~ :21	PSM Type Polyvinylchloride PVC Sewer Pipe and Fittings	IPC	IPSDC	IRC®
B182.4~~—18~~ :21	Profile Polyvinylchloride PVC Sewer Pipe and Fittings	IPC	IPSDC	IRC®
B182.6~~—18~~ :21	Profile Polyethylene (PE) Sewer Pipe and Fittings for Leak-proof Sewer Applications	IPC		IRC®
B182.8~~—18~~ :21	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)~~ :22	Drinking Water Treatment Systems	IPC		IRC®
B55.1—~~2015~~ 20	Test Method for Measuring Efficiency and Pressure Loss of Drain Water Heat Recovery Units	IECC®		IRC®
B55.2—~~2015~~ :20	Drain Water Heat Recovery Units	IRC®		
B602~~—16~~ :20	Mechanical Couplings for Drain, Waste and Vent Pipe and Sewer Pipe	IPC	IPSDC	IRC®
B64.1.1~~—11(R2016)~~ :21	Atmospheric Type Vacuum Breakers, (AVB)	IPC		IRC®
B64.1.2~~—11(R2016)~~ :21	Pressure Vacuum Breakers, (PVB)	IPC		IRC®
B64.1.3~~—11(R2016)~~ :21	Spill-r~~R~~esistant p~~P~~ressure v~~V~~acuum b~~B~~reakers (SRPVB)	IPC		IRC®
B64.10—17	~~Manual for the~~ Selection and Installation of Backflow ~~Prevention Devices~~ Preventers	IPC		
B64.2.1.1~~—11(2016)~~ :21	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)~~ protection systems (RPF)	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 Protection 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 Valve Backflow Preventers (DCVA)	IRC®	

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B64.6—~~11(2016)~~ :21	Dual Check Valve Backflow Preventers (DuC)	IRC®		
B64.6—~~11(R2016)~~ :21	Dual Check Valve (DuC) Backflow Preventers	IPC		
B64.7—~~11(2016)~~ :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		

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CTI	Cooling Technology Institute		
Standard Reference Number	**Title**	**Referenced in Code(s):**	
ATC 105DS—~~2018~~ 2019	Acceptance Test Code for Dry Fluid Coolers	IECC®	
ATC 105S—~~11~~ 2021	Acceptance Test Code for Closed Circuit Cooling Towers	IECC®	
CTI STD 201 RS~~(17)~~ 2021	Performance Rating of Evaporative Heat Rejection Equipment	IECC®	

DASMA	Door & Access Systems Manufacturers Association International		
Standard Reference Number	**Title**	**Referenced in Code(s):**	
ANSI/DASMA 105—~~2017~~ 2020	Test Method for Thermal Transmittance and Air Infiltration of Garage Doors and Rolling Doors	IECC®	IRC®
ANSI/DASMA 107—~~2017~~ 2020	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~~ 2022	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—~~19~~ 22	Structural Plywood	IBC	IRC®
PS 20—~~05~~ 20	American Softwood Lumber Standard	IBC	IRC®
PS 2—18	Performance Standard for Wood~~-based~~ Structural~~-use~~ Panels	IBC	IRC®

FEMA	Federal Emergency Management Agency

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Standard Reference Number	Title	Referenced in Code(s):	
FEMA TB-11—~~01~~ 23	Crawlspace Construction for Buildings Located in Special Flood Hazard Area	IRC®	
FEMA TB-2—~~08~~ 23	Flood Damage-resistant Materials Requirements	IRC®	
FEMA-TB-11—~~01~~ 23	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~~ 23	Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products	IBC	IRC®
712—~~14~~ 23	Voluntary Specification for Mechanically Attached Flexible Flashing	IRC®	
714—~~20~~ 23	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~~ 22	Specifications for Sunrooms	IRC®	
AAMA/WDMA/CSA 101/I.S.2/A ~~C~~440—~~17~~ 22	North American Fenestration Standard/Specifications for Windows, Doors and Unit Skylights	IECC®	
FM	**FM Approvals**		
Standard Reference Number	**Title**	**Referenced in Code(s):**	
4474—~~2011~~ 2020	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**		

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Standard Reference Number	Title	Referenced in Code(s):
GA 216—~~2018~~ 2021	Application and Finishing of Gypsum Panel Products	IBC
GA 600—~~2018~~ 2021	Fire-resistance and Sound Control Design Manual, ~~22nd~~ 23rd Edition	IBC
GA-253—~~2018~~ 2021	Application of Gypsum Sheathing	IRC®

IAPMO	IAPMO Group	
Standard Reference Number	**Title**	**Referenced in Code(s):**
ANSI/CAN/IAPMO Z1001—~~2016~~ 2021	Prefabricated Gravity Grease Interceptors	IPC
ASPE/IAPMO Z1034-2015(R2020)	Test Method for Evaluating Roof Drain Performance	IPC
CSA B45.5—~~17~~ :22 /IAPMO Z124—~~2017~~ 2022 ~~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/IES~~NA~~ 90.1—~~2019~~ 2022	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~~ 2021	Design of Safe Closed-circuit Ammonia Refrigeration Systems	IFC

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ANSI/IIAR 9—~~2018~~ 2020	~~Standard for Recognized and Generally Accepted Good Engineering Practices (RAGAGEP) for Existing Closed-circuit Ammonia Refrigeration Systems~~ Minimum System Safety Requirements for Existing Closed-Circuit Ammonia Refrigeration Systems	IFC

IKECA	International Kitchen Exhaust Cleaning Association	
Standard Reference Number	**Title**	**Referenced in Code(s):**
ANSI/IKECA C10—~~2016~~ 2021	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~~ 2020	Safety Requirements for Industrial Scissors Lifts	IBC
ANSI/MH16.1—~~12~~ 2021	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—~~2018~~ 2023	Pipe Hangers and Supports—Materials, Design and Manufacture, Selection, Application and Installation	IFGC	IMC	IRC®
SP-110—~~2010~~ 2023	Ball Valves, Threaded, Socket Welding, Solder Joint, Grooved and Flared Ends (incl. a 2010 Errata Sheet)	IPC	IRC®	
SP-122—~~2017~~ 2023	Plastic Industrial Ball Valves	IPC	IRC®	
SP-139—~~2014~~ 2022	Copper Alloy Gate, Globe, Angle and Check Valves for Low Pressure/Low Temperature Plumbing Applications	IPC	IRC®	

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SP-42—~~2013~~ 2022	Corrosion Resistant Gate, Globe, Angle and Check Valves with Flanged and Butt Weld Ends (Glasses 150, 300 & 600)	IRC®	
SP-67—~~2011~~ 2022	Butterfly Valves	IPC	IRC
SP-70—~~2011~~ 2023	Gray Iron Gate Valves, Flanged and Threaded Ends	IPC	IRC®
SP-70—~~2013~~ 2023	Gray Iron Gate Valves, Flanged and Threaded Ends	IPC	
SP-72—~~2010a~~ 2023	Ball Valves with Flanged or Butt-welding Ends for General Service	IPC	IRC®
SP-78—~~2011~~ 2023	Cast Iron Plug Valves, Flanged and Threaded Ends	IPC	
SP-78—~~2011~~ 2023	Cast Iron Plug Valves, Flanged and Threaded Ends	IRC®	
SP-80—~~2013~~ 2019	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~~ 2023	National Board Inspection Code, Part 3 (ANSI/NB23)	IMC

NCMA	**National Concrete Masonry Association**	
Standard Reference Number	**Title**	**Referenced in Code(s):**
TEK 5—~~84~~ B(2005)	~~Details~~ Detailing ~~for~~ Concrete Masonry Fire Walls	IBC

NEMA	**National Electrical Manufacturers Association**	
Standard Reference Number	**Title**	**Referenced in Code(s):**
250—~~2018~~ 2020	Enclosures for Electrical Equipment (1,000 Volt Maximum)	IFC
~~NEMA~~ ANSI Z535.1—2017	~~ANSI/NEMA Color Chart~~ American National Standard for Safety Colors	ISPSC

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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—~~18~~ 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—~~18~~ 22	Standard on Halon 1301 Fire Extinguishing Systems	IPMC	IBC	IFC	

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12~~—15~~ 22	Standard on Carbon Dioxide Extinguishing Systems	IBC			
12~~—18~~ 22	Standard on Carbon Dioxide Extinguishing Systems	IPMC	IFC		
13D~~—19~~ 22	Standard for the Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes	IBC	IFC	IRC®	
13R~~—19~~ 22	Standard for the Installation of Sprinkler Systems in Low-rise Residential Occupancies	IBC	IFC	IRC®	
13~~—19~~ 22	Standard for Installation of Sprinkler Systems, 2022 and 2019 editions	IBC	IFC		
14~~—19~~ 22	Standard for the Installation of Standpipe and Hose System	IBC	IFC		
15~~—17~~ 22	Standard for Water Spray Fixed Systems for Fire Protection	IFC			
170~~—18~~ 21	Standard for Fire Safety and Emergency Symbols	IBC	IFC		
2001~~—18~~ 22	Standard on Clean Agent Fire Extinguishing Systems	IPMC	IBC	IFC	
204~~—18~~ 21	Standard for Smoke and Heat Venting	IPMC	IFC		
20~~—19~~ 22	Standard for the Installation of Stationary Pumps for Fire Protection	IBC	IFC		
211~~—19~~ 22	Standard for Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances	IFGC	IMC	IBC	IRC®
221~~—21~~ 24	Standard for High Challenge Fire Walls, Fire Walls and Fire Barrier Walls	IBC			
22~~—18~~ 23	Standard for Water Tanks for Private Fire Protection	IFC			
232~~—17~~ 22	Standard for the Protection of Records	IFC			

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

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

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

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

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

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

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

PDI	Plumbing and Drainage Institute	
Standard Reference Number	**Title**	**Referenced in Code(s):**

PDI G101 ~~(2012)~~ (2017)	Testing and Rating Procedure for Hydro Mechanical Grease Interceptors with Appendix of ~~Sizing and~~ Installation ~~Data~~ and Maintenance	IPC

PHTA	Pool & Hot Tub Alliance (formerly APSP)	
Standard Reference Number	**Title**	**Referenced in Code(s):**
ANSI/APSP/ICC 15~~—2011~~ 2021	American National Standard for Residential Swimming Pool and Spa Energy Efficiency ~~Includes Addenda A Approved January 9, 2013~~	ISPSC
ANSI/APSP/ICC 16~~—2017~~ 2022	American National Standard for Suction Outlet Fittings (SOFA) for Use in Pools, Spas, and Hot Tubs	ISPSC
ANSI/APSP/ICC 4~~—2012~~ 2022	American National Standard for Aboveground/Onground Residential Swimming Pools~~—Includes Addenda A Approved April 4, 2013~~	ISPSC
ANSI/APSP/ICC/NPC 12 - ~~2016~~ 2023	American National Standard for the Plastering of Swimming Pools	ISPSC

PLIB	Pacific Lumber Inspection Bureau (formerly WCLIB)	
Standard Reference Number	**Title**	**Referenced in Code(s):**
AITC 200~~—09~~ 20	Manufacturing Quality Control Systems Manual for Structural Glued Laminated Timber	IBC

PSAI	Portable Sanitation Association International	
Standard Reference Number	**Title**	**Referenced in Code(s):**
~~PSAI/ANSI~~ ANSI/PSAI Z4.3—2016	American National Standard: for Sanitation: ~~for~~ Non-sewered Waste-disposal Systems : Minimum Requirements	IPC

RESNET	Residential Energy Services Network, Inc.	
Standard Reference Number	**Title**	**Referenced in Code(s):**

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ANSI/RESNET/ICC 301—~~2019~~ 2022	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~~ 2022	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~~ 21	~~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/QC~~ SD—~~2017~~ 2022	~~Standard for Quality Control and Quality Assurance for Installation of Steel Deck~~ Standard for Steel Deck	IBC

SJI	**Steel Joist Institute**	
Standard Reference Number	**Title**	**Referenced in Code(s):**
SJI 100—2020	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~~ 2020	HVAC Duct Construction Standards—Metal and Flexible, ~~4th Edition (ANSI)~~ (ANSI/SMACNA 006-2020)	IFGC	IMC	IRC®

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~~SMACNA/ANSI~~ ANSI/SMACNA ~~—~~ 2nd edition 2013	Round Industrial Duct Construction Standards~~, 3rd Edition~~ (ANSI/SMACNA 005-2013)	IMC
~~SMACNA/ANSI~~ ANSI/SMACNA ~~—2011~~ 2nd Edition 2004	Rectangular Industrial Duct Construction Standards, ~~2nd Edition~~ (ANSI/SMACNA 002-2004)	IMC
SMACNA~~—~~ 1st edition 2015	~~SMACNA~~ Phenolic Duct Construction Standards~~, 1st Edition (ANSI)~~ (ANSI/SMACNA 022-2015)	IMC
SMACNA~~—10~~ 2021	Fibrous Glass Duct Construction Standards ~~7th~~ 8th edition	IRC®
SMACNA~~—2010~~ 2021	Fibrous Glass Duct Construction Standards~~, 7th Edition~~ 8th edition	IMC
SMACNA~~—~~2nd edition 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~~ 21	Test Standard for Gutter Systems	IBC
ANSI/SPRI VF-1~~—17~~ 21	External Fire Design Standard for Vegetative Roofs	IBC
ANSI/SPRI/FM 4435-ES-1~~—17~~ 21	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~~ I-2023	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—~~2013~~ 14 (19)	~~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~~ Assemblies	IBC	
402—~~2016~~ 2022	Building Code Requirements for Masonry Structures	IBC	IRC®
404—~~2016~~ 2023	Standard for the Design of Architectural Cast Stone	IBC	IRC®
504—~~2016~~ 2023	Standard for the Fabrication of Architectural Cast Stone	IBC	
602—~~2016~~ 2022	Specification for Masonry Structures	IBC	IRC®
604—~~2016~~ 2023	Standard for the Installation of Architectural Cast Stone	IBC	

TPI	Truss Plate Institute		
Standard Reference Number	**Title**	**Referenced in Code(s):**	
ANSI/TPI 1—~~2014~~ 2022	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 revisions through ~~August 2018~~ November 2020	ISPSC	
1026—2012	Electric Household Cooking and Food Serving Appliances—with revisions through ~~July 2018~~ March 2021	IRC®	

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

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

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

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1887—04	Fire Tests of Plastic Sprinkler Pipe for Visible Flame and Smoke Characteristics—with revisions through ~~July 2017~~ October 2021	IMC			
1897—2015	Uplift Tests for Roof Covering Systems with revisions through September 2020	IBC	IRC®		
1974—~~2017~~ 2018	~~Standard for~~ Evaluation for Repurposing Batteries	IFC			
1978—2010	Grease Ducts—with revisions through ~~April 2017~~ October 2021	IMC			
1994—2015	Luminous Egress Path Marking Systems with revisions through July 2020	IBC	IFC		
1996—2009	Electric Duct Heaters—with revisions through ~~July 2016~~ September 2021	IMC	IRC®		
2011—2019	Outline for investigation for Machinery with revisions through October 2020	IFC			
2017—2008	General-purpose Signaling Devices and Systems—with revisions through ~~January 2016~~ December 2016	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~~ August 2021	IMC	IBC	IFC	IRC®
2079—2015	Tests for Fire Resistance of Building Joint Systems - with revisions through July 2020	IBC	IFC		
207—2009	Refrigerant-containing Components and Accessories, Nonelectrical—with revisions through ~~June 2014~~ January 2020	IMC			

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

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268—2016	Smoke Detectors for Fire Alarm Systems-with revisions through ~~July 2016~~ October 2019	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~~ March 2021	IBC		IRC®		
2846—2014	Fire Test of Plastic Water Distribution Plumbing Pipe for Visible Flame and Smoke Characteristics—with revisions through ~~December 2016~~ January 2021	IMC				
300—~~2005~~ 2019	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~~ September 2019	IFC				
325—2017	Door, Drapery, Gate, Louver and Window Operations and Systems with revisions through February 2020	IBC	IFC	IRC®		
343—~~2017~~ 2008	Pumps for Oil-burning Appliances with revisions through December 2017	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~~ June 2012	ISPSC				
391—2010	Solid-fuel and Combination-fuel Central and Supplementary Furnaces—with revisions through ~~June 2014~~ August 2019	IMC				
399—2017	Drinking-Water Coolers—with revisions through ~~August 2018~~ July 2020	IPC				

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427—11	Standard for Refrigerating Units with revisions through February 2014	IMC		
430—2015	Waste Disposers—with revisions through ~~February 2018~~ September 2021	IPC		
441—16	Gas Vents—with revisions through ~~July 2016~~ August 2019	IRC®		
471—2010	Commercial Refrigerators and Freezers—with revisions through ~~November 2018~~ September 2019	IMC		
484—14	~~Standard for~~ Room Air Conditioners with revisions through May 2019	IMC		
507—2017	Electric Fans—with revisions through ~~August 2018~~ May 2020	IMC	IRC®	
508—2018	Industrial Control Equipment with revisions through July 2021	IMC	IPC	IRC®
515—2015	~~Standard for~~ Electric~~al~~ Resistance Trace Heating for Commercial Applications	IECC®		
536—~~2014~~ 2021	Flexible Metallic Hose	IMC	IRC®	
555C—2014	Ceiling Dampers—with Revisions through ~~May 2017~~ January 2021	IMC	IBC	
555S—2014	Smoke Dampers—with Revisions through October ~~2016~~ 2020	IMC	IBC	
555—2006	Fire Dampers—with Revisions through October ~~2016~~ 2020	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~~ March 2019	IBC	IRC®	

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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 - with revisions through April 2006	IFC		
60950-1—~~2014~~ 2007	Information Technology Equipment—Safety Requirements with revisions through May 2019	IFC		
61730-1—2017	Photovoltaic (PV) Module Safety Qualification - Part 1: Requirements for Construction - with revisions through April 2020	IBC	IRC®	
61730-2—2017	Photovoltaic (PV) Module Safety Qualification - Part 2: Requirements for Testing - with revisions through April 2020	IBC	IRC®	
62368-1—~~2014 19~~	Audio/video, Information and Communication Technology Equipment—Safety Requirements - with revisions through October 2021	IFC		
651—2011	Schedule 40 and Schedule 80~~, Type EB and A~~ Rigid PVC Conduit and Fittings—with Revisions through ~~June 2016~~ March 2020	IFGC	IRC®	
705—2017	Power Ventilators—with revisions through ~~October 2018~~ August 2021	IFGC	IMC	IRC®
710B—2011	Recirculating Systems—with Revisions through ~~August 2014~~ February 2019	IMC	IBC	IFC
710—12	Exhaust Hoods for Commercial Cooking Equipment—with Revisions through ~~November 2013~~ February 2021	IECC®		

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

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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~~ September 2019	IFC		
923—2013	Microwave Cooking Appliances—with revisions through ~~July 2017~~ August 2020	IMC	IRC®	
924—2016	Standard for Safety Emergency Lighting and Power Equipment—with Revisions through May ~~2018~~ 2020	IBC	IFC	
9540A—~~2017~~ 2019	Standard for Safety Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems	IFC		
9540—~~2016~~ 2020	Energy Storage Systems and Equipment - with revisions through April 2021	IFC	IRC®	
959—2010	Medium Heat Appliance Factory-built Chimneys—with Revisions through ~~June 2014~~ August 2019	IFGC	IMC	IRC®
9—2009	Fire Tests of Window Assemblies—with Revisions through ~~February 2015~~ March 2020	IBC		
UL/CSA 60335-2-40—~~17~~ 2019	Household and Similar Electrical Appliances—Safety—Part 2-~~40~~: Particular Requirements for ~~Electrical Heat Pumps, Air-Conditioners and Dehumidifiers~~ Motor-Compressors	IMC		
UL/CSA 60335-2-89—~~17~~ 21	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):**

P11673Text Modification

AAMA/WDMA/CSA 101/I.S.2/A440—~~17~~ 22	Specifications for Windows, Doors and Unit Skylights	IBC	IECC®	IRC®

I.S. 11—~~16~~ 23	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~~ 2023	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: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Fuel Gas

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P11635		/ADM1-22 Part I			
Date Submitted	05/14/2024	**Section**	202	**Proponent**	Mo Madani
Chapter	2	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

The proposed revision to the definitions for “Listed” recognizes that listing organizations may use other terms to identify “listed” equipment, products, or materials.

Rationale

See attached

P11635Text Modification

See attached

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Mod11635_TextOfModification.pdf

P11635Text Modification

ADM1-22 Part I

Original Proposal

IBC: SECTION 202; IEBC: SECTION 202 (New); IFC: SECTION 202; IFGC: SECTION 202 (New); IMC: SECTION 202 (New); ISPSC: SECTION 202 (New)

Proponents: Jonathan Roberts, UL LLC, UL LLC (jonathan.roberts@ul.com)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE ADMINISTRATIVE CODE COMMITTEE. PART II WILL BE HEARD BY THE IRC-BUILDING CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Fuel Gas Code

Revise as follows:

[A] LISTED.

Equipment, materials, products or services included in a list published by an organization acceptable to the code official and concerned with evaluation of products or services that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose. Terms that are used to identify listed equipment, products, or materials include "listed", "certified", "classified" or other terms as determined appropriate by the listing organization.

Reason: The proposed revision to the definitions for "Listed" recognizes that listing organizations may use other terms to identify "listed" equipment, products, or materials. Two examples of other terms used meet the definition of listed include "certified" and "classified". The term "certified" is a more globally recognized term used by listing organizations compared to the term "listed". The term "classified" has historically referred to building materials evaluated for specific performance aspects such as surface burning characteristics that has also been accepted by code officials as meeting the definition of "Listed".

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is simply modifying the existing definitions of Listed, and adding a definition of Listed where one does not exist.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The committee stated that the reason for approval was that the addition of the terminology improves the definition and is something that is needed. (Vote: 8-5)

Final Hearing Results

ADM1-22 Part I AS

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Fuel Gas

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P11652		/G1-21 Part V			
Date Submitted	05/14/2024	**Section**	306.1	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Because the term ‘accessible’ is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words,

Rationale

See attached

P11652Text Modification

See attached

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Mod11652_TextOfModification.pdf

P11652Text Modification

G1-21 Part V

Original Proposal

PART V - IMC: 306.1, 506.3.2.2; IFGC: [M]306.1; ICCPC: SECTION 202 (New)

Proponents: Mike Nugent, Chair, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, Chair, FCAC (fcac@iccsafe.org); Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Fuel Gas Code

Revise as follows:

[M] 306.1 Access for maintenance and replacement. Appliances, control devices, heat exchangers and HVAC components that utilize energy shall~~be accessible~~ have access for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other appliances, or any other *piping* or ducts not connected to the *appliance* being inspected, serviced, repaired or replaced. A level working space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be provided in front of the control side to service an *appliance*.

Reason: This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 . Because the term 'accessible' is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. Many of the codes use the defined term 'access (to)' or 'ready access (to)' for access by maintenance and service personnel or fire departments. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes.

Code change proposal M2-15 removed 'door' from the definitions for 'access (to)' and 'ready access (to)'. That coordination item did not happen across codes and this proposal seeks to complete that effort.

Similar proposals will be submitted for the Group B cycle for IRC, IECC and IEBC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC), ICC Fire Code Action Committee (BCAC), and ICC Plumbing/Mechanical/Gas Code Action Committee (PMGCAC).
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.

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The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: PMGCAC.

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
There is no change to any of the requirements. This is only a clarification in terminology.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The proposal was approved as submitted because it provides coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 . Because the term 'accessible' is most commonly understood as requiring access for persons with disabilities, the proposal deletes the word accessible from the code and replaces it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes. (Vote: 11-0)

Final Hearing Results

G1-21 Part V AS

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Fuel Gas

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P11653		/S196-22			
Date Submitted	05/14/2024	**Section**	302.6	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

This proposal sets uniform requirements for field modifications to cold-formed steel framing members (cutting, notching, and boring holes) in accordance with AISI standards.

Rationale

See attached

P11653Text Modification

See attached

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Mod11653_TextOfModification.pdf

P11653Text Modification

S196-22

Original Proposal

IBC: 2211.3 (New); IPC: 307.2, 307.3 (New), [BS] C101.5, [BS] C101.6; IMC: [BS] 302.5, [BS] 302.5.2, [BS] 302.5.3; IFGC: [BS] 302.6, [BS] 302.7

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

2021 International Fuel Gas Code

Revise as follows:

[BS] 302.6 Cutting, notching and boring ~~holes~~ in cold-formed steel framing. The cutting, notching and boring of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. ~~Flanges and lips of load-bearing, cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing, cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations penetration spacing or minimum hole edge distance as prescribed by the *registered design professional*. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the *registered design professional*.~~

Delete without substitution:

~~**[BS] 302.7 Cutting, notching and boring holes in non-structural cold-formed steel wall framing.** Flanges and lips of nonstructural cold-formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed 1 1/2 inches (38 mm) in width or 4 inches (102 mm) in length, and the holes shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.~~

Reason: This proposal sets uniform requirements for field modifications to cold-formed steel framing members (cutting, notching, and boring holes) in accordance with AISI standards.
Currently, the IFGC, IMC, and IPC all provide guidance on modification of cold-formed steel framing elements within the path of utilities. Although the guidance provided by each code is similar, they are not identical in wording or scope and are handled differently within each document.

Differences include but are not limited to:

- IFGC, IMC: The cutting and notching criteria is within the main body of the code.
- IFGC, IMC: Includes direction for wood, steel, cold-formed steel, and non-structural cold-formed steel materials.
- IPC: Points to the IBC for cutting and notching criteria but provides Appendix C as an alternate.
- IPC Appendix C:
  - Includes some, but not all, cutting and notching criteria and limitations found within the IFGC and IMC.
  - Does not address steel and cold-formed materials.

This will provide clear and consistent criteria across all trades on how to field modify framing members and when modification of such members requires input from a design professional.

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/.

Page: 1

Mod_11653_Text_S196-22.pdf

P11653Text Modification

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal is a coordination of existing cutting, notching and boring provisions that are already used in practice but are not identical between codes or fully aligned with AISI standards.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
2021 International Building Code

2211.3 Cutting~~,~~ and notching~~, and boring~~. The cutting~~,~~ and notching ~~and boring~~ of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.

2021 International Plumbing Code

307.3 Cutting~~,~~ and notching ~~and boring~~ in cold-formed steel framing. The cutting~~,~~ and notching ~~and boring~~ of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.

2021 International Mechanical Code

[BS]302.5 Cutting~~,~~ and notching ~~and boring~~ in cold-formed steel framing. The cutting~~,~~ and notching ~~and boring of~~ holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. ~~The cutting, notching and boring of steel framing members shall comply with Sections 302.5.1 through 302.5.3.~~

2021 International Fuel Gas Code

[BS]302.6 Cutting~~,~~ and notching ~~and boring~~ in cold-formed steel framing. The cutting~~,~~ and notching ~~and boring~~ of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.

Committee Reason: Approved as modified as the proposal coordinates the requirements across the I-Codes and adds the needed reference to ANSI S240. The modification correctly removes reference to boring for steel. (Vote: 13-0)

Final Hearing Results

S196-22 AM

Page: 2

Mod_11653_Text_S196-22.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Fuel Gas

10

P11654	/S224-22				
Date Submitted	05/14/2024	**Section**	302.3	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments Yes

Related Modifications

Summary of Modification

This proposal consolidates similar wood cutting, notching and boring criteria from the IFGC, IMC, IPC, and IBC into a single location in the IBC, and does not impose new requirements or restrict any practices currently allowed within the I-Codes

Rationale

See attached

1st Comment Period History

P11654-G1

Proponent Mo Madani Submitted 6/3/2024 3:57:42 PM Attachments Yes

Comment:

Attached are additional changes for correlation with NFPA 54 National Fuel Gas Code.

P11654Text Modification

See attached

Page: 1

Mod11654_TextOfModification.pdf

P11654Text Modification

S224-22

Original Proposal

IBC: SECTION 2308.3 (New), 2308.3.1 (New), 2308.3.2 (New), 2308.3.2.1 (New), 2308.3.3 (New), 2308.3.4 (New), 2308.3.5 (New), 2308.4.2.4, 2308.5.9, 2308.5.10, 2308.7.4; IPC: 307.2, 307.3 (New), [BS] C101.1, [BS] C101.2, [BS] C101.3; IMC: [BS] 302.3, [BS] 302.3.1, [BS] 302.3.2, [BS] 302.3.3; IFGC: [BS] 302.3, [BS] 302.3.2, [BS] 302.3.3, [BS] 302.3.4

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

2021 International Fuel Gas Code

Revise as follows:

[BS] 302.3 Cutting, notching and boring in wood members. The cutting, notching and boring of wood framing members shall comply with Sections ~~ 2308.3 of the *International Building Code*. ~~302.3.1 through 302.3.4~~.

Delete without substitution:

~~**[BS] 302.3.2 Joist notching and boring.** Notching at the ends of joists shall not exceed one-fourth the joist depth. Holes bored in joists shall not be within 2 inches (51 mm) of the top and bottom of the joist and their diameters shall not exceed one-third the depth of the member. Notches in the top or bottom of the joist shall not exceed one-sixth the depth and shall not be located in the middle one-third of the span.~~

~~**[BS] 302.3.3 Stud cutting and notching.** In exterior walls and bearing partitions, any wood stud is permitted to be cut or notched to a depth not exceeding 25 percent of its width. Cutting or notching of studs to a depth not greater than 40 percent of the width of the stud is permitted in nonload-bearing partitions supporting no loads other than the weight of the partition.~~

~~**[BS] 302.3.4 Bored holes.** The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall be not closer than 5/8 inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.~~

Reason: This proposal consolidates similar wood cutting, notching and boring criteria from the IFGC, IMC, IPC, and IBC into a single location in the IBC, and does not impose new requirements or restrict any practices currently allowed within the I-Codes. The proposed language draws from current language in the IPC, IMC, and IFGC and IBC provisions in the conventional light-framed section. The existing language was used to the greatest extent possible and relocated to minimize technical changes.
Within the IBC, existing wood framing notching, cutting and boring provisions have been relocated into a single new Section 2308.3. This reorganization into one location makes the IBC provisions easy to find and will provide clear and consistent criteria across all trades on how to field modify framing members and when modification of such members requires input from a design professional.

Structural framing members are frequently modified in the field by non-structural trades, to facilitate the installation of mechanical, electrical, plumbing, and other utilities. Especially in conventional light-framed wood construction, such modifications are rarely overseen by a design professional with knowledge of critical framing elements that should remain unmodified and the role they play within the structure.

It is unrealistic to expect field personnel to continually seek the guidance of a design professional for every framing member requiring modification. However, modifications of critical framing members have the potential to negatively impact the integrity of the structure and the utility systems that rely on that structure for support. The resulting structural deficiencies caused by field modifications to framing members may only be realized during significant high-wind, seismic, impact, or other loading events that, while within the normal structure design criteria, are outside every day operating conditions. At best, such deficiencies may be realized by local deformation of finish materials and at worst, by partial or full collapse of a structure.

Currently, the IFGC, IMC, IPC, and IBC all provide guidance on modification of structural framing elements within the path of utilities.

Page: 1

Mod_11654_Text_S224-22.pdf

P11654Text Modification

Although the guidance provided by each code is similar, they are not identical in wording or scope and are handled differently within each document.

Differences include but are not limited to:

- IFGC, IMC: The cutting and notching criteria is within the main body of the code.
- IFGC, IMC: Includes direction for wood, steel, cold-formed steel, and non-structural cold-formed steel materials.
- IPC: Points to the IBC for cutting and notching criteria but provides Appendix C as an alternate. · IPC Appendix C
  - Includes some, but not all, cutting and notching criteria and limitations found within the IFGC and IMC.
  - Does not address steel and cold-formed materials.

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

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Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal consolidates existing and slightly varied provisions from multiple locations into one location within the wood chapter of the International Building Code.

Public Hearing Results

Committee Action **Disapproved**

Committee Reason: Disapproved as the proposal needs additional work as it affects multiple codes which address different multiple trades and it is appropriate to leave the requirements in each code as is currently done. (Vote: 11-3)

Final Hearing Results

S224-22 AS

Page: 2

Mod_11654_Text_S224-22.pdf

closers, shall not be used to provide the required clearances.

305.9 (IFGS) Parking structures. *Appliances* installed in enclosed, basement and underground parking structures shall be installed in accordance with **NFPA 88A**.

305.10 (IFGS) Repair garages. *Appliances* installed in repair garages shall be installed in accordance with **NFPA 30A**.

305.11 (IFGS) Installation in aircraft hangars. Heaters in aircraft hangars shall be installed in accordance with **NFPA 409**.

305.12 (IFGS) Avoid strain on gas piping. *Appliances* shall be supported and connected to the *piping* so as not to exert undue strain on the connections.

SECTION 306 (IFGC)
ACCESS AND SERVICE SPACE

[M] 306.1 Access for maintenance and replacement. *Appliances*, control devices, heat exchangers and HVAC components that utilize energy shall ~~be accessible~~ provide access for inspection, service, repair and replacement without disabling the function of a fire-resistance-rated assembly or removing permanent construction, other *appliances*, or any other *piping* or ducts not connected to the *appliance* being inspected, serviced, repaired or replaced. A level working space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be provided in front of the control side to service an *appliance*.

[M] 306.2 Appliances in rooms. Rooms containing *appliances* shall be provided with a door and an unobstructed passageway measuring not less than 36 inches (914 mm) wide and 80 inches (2032 mm) high.

Exception: Within a *dwelling unit*, *appliances* installed in a compartment, alcove, basement or similar space shall be provided with *access* by an opening or door and an unobstructed passageway measuring not less than 24 inches (610 mm) wide and large enough to allow removal of the largest *appliance* in the space, provided that a level service space of not less than 30 inches (762 mm) deep and the height of the *appliance*, but not less than 30 inches (762 mm), is present at the front or service side of the *appliance* with the door open.

[M] 306.3 Appliances in attics. Attics containing *appliances* shall be provided with an opening and unobstructed passageway large enough to allow removal of the largest *appliance*. The passageway shall be not less than 30 inches (762 mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) in length measured along the centerline of the passageway from the opening to the *appliance*. The passageway shall have continuous solid flooring not less than 24 inches (610 mm) wide. A level service space not less than 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present at the front or service side of the *appliance*. The clear *access* opening dimensions shall be not less than 20 inches by 30 inches (508 mm by 762 mm) and large enough to allow removal of the largest *appliance*.

Exceptions:

1. The passageway and level service space are not required where the *appliance* is capable of being serviced and removed through the required opening.
2. Where the passageway is not less than 6 feet (1829 mm) high for its entire length, the passageway shall be not greater than 50 feet (15 250 mm) in length.

[M] 306.3.1 Electrical requirements. A luminaire controlled by a switch located at the

ladder served. A guard rail shall be provided on all open sides of the landing.

7. Climbing clearance. The distance from the centerline of the rungs to the nearest permanent object on the climbing side of the ladder shall be not less than 30 inches (762 mm) measured perpendicular to the rungs. This distance shall be maintained from the point of ladder access to the bottom of the roof hatch. A minimum clear width of 15 inches (381 mm) shall be provided on both sides of the ladder measured from the midpoint of and parallel with the rungs, except where cages or wells are installed.
8. Landing required. The ladder shall be provided with a clear and unobstructed bottom landing area having a minimum dimension of 30 inches by 30 inches (762 mm by 762 mm) centered in front of the ladder.
9. Ladders shall be protected against corrosion by *approved* means.
10. Access to ladders shall be provided at all times.
11. Top landing required. The ladder shall be provided with a clear and unobstructed landing on the exit side of the roof hatch having a minimum space of 30 inches (762 mm) deep and be of the same width as the hatch.

Catwalks installed to provide the required *access* shall be not less than 24 inches (610 mm) wide and shall have railings as required for service platforms.

Exception: This section shall not apply to Group R-3 *occupancies*.

[M] 306.5.1 Sloped roofs. Where *appliances*, *equipment*, fans or other components that require service are installed on a roof having a slope of 3 units vertical in 12 units horizontal (25-percent slope) or greater and having an edge more than 30 inches (762 mm) above grade at such edge, a level platform shall be provided on each side of the *appliance* or *equipment* to which *access* is required for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension and shall be provided with guards. The guards shall extend not less than 42 inches (1067 mm) above the platform, shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*. *Access* shall not require walking on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). Where *access* involves obstructions greater than 30 inches (762 mm) in height, such obstructions shall be provided with ladders installed in accordance with **Section 306.5** or stairways installed in accordance with the requirements specified in the *International Building Code* in the path of travel to and from *appliances*, fans or *equipment* requiring service.

[M] 306.5.2 Electrical requirements. A receptacle outlet shall be provided at or near the *appliance* location in accordance with **NFPA 70**.

[M] 306.6 Guards. Guards shall be provided where various components that require service and roof hatch openings are located within 10 feet (3048 mm) of a roof edge or open side of a walking surface and such edge or open side is located more than 30 inches (762 mm) above the floor, roof, or grade below. The guard shall extend not less than 30 inches (762 mm) beyond each end of components that require service and each end of the roof hatch parallel to the roof edge. The top of the guard shall be located not less than 42 inches (1067 mm) above the elevated surface adjacent to the guard. The guard shall be constructed so as to prevent the passage of a 21-inch-diameter (533 mm) sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.

Exception: Guards are not required where permanent fall arrest/restraint anchorage connector

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Fuel Gas

P11648	/FG3-21				11
Date Submitted	05/14/2024	**Section**	407.2	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments Yes

Related Modifications

Summary of Modification

Modifies text of Section 407.2 Design and installation.

Rationale

See attached

1st Comment Period History

P11648-G1

Proponent Mo Madani Submitted 6/3/2024 3:59:30 PM Attachments Yes

Comment:

Correlation with NFPA 54 National Fuel Gas Code.

1st Comment Period History

P11648-G2

Proponent Mo Madani Submitted 6/3/2024 4:05:41 PM Attachments Yes

Comment:

Additional changes for correlations with the NFPA 54 National Fuel Gas Code.

P11648Text Modification

See attached

Page: 1

Mod11648_TextOfModification.pdf

P11648Text Modification

FG3-21

Original Proposal

IFGC: 407.2

Proponents: William Chapin, Professional Code Consulting, LLC, Professional Code Consulting, LLC (bill@profcc.us)

2021 International Fuel Gas Code

Revise as follows:

407.2 Design and installation. *Piping* shall be supported with~~metal~~ pipe hooks, ~~metal~~ pipe straps, ~~metal~~ bands, ~~metal~~ brackets, ~~metal~~ hangers or building structural components, suitable for the size of*piping*, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration. *Piping* shall be anchored to prevent undue strains on connected*appliances* and shall not be supported by other *piping*. Pipe hangers and supports shall conform to the requirements of MSS SP-58 and shall be spaced in accordance with Section 415. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the *piping* between anchors. The components of the supporting*equipment* shall be designed and installed so that they will not be disengaged by movement of the supported *piping*.

Reason: This section explicitly requires all components used be of adequate strength, etc. With the plethora of materials invented over the past 100 years, there is no reason for the code to restrict some components to metal. Metal can be abrasive to piping materials and may cause damage over time with the free expansion and contraction of piping.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Choice of materials for hanging and space will not have a significant impact on the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

FG3-21 AS

Page: 1

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Exception: Dual oven-type combination ranges; *direct-vent appliances*; fan-assisted combustion system *appliances*; *appliances* requiring chimney draft for operation; single firebox boilers equipped with conversion burners with inputs greater than 400,000 Btu per hour (117 kW); *appliances* equipped with blast, power or pressure burners that are not *listed* for use with draft hoods; and *appliances* designed for forced venting.

503.12.2 Installation. A draft hood supplied with or forming a part of a *listed* vented *appliance* shall be installed without alteration, exactly as furnished and specified by the *appliance* manufacturer.

503.12.2.1 Draft hood required. If a draft hood is not supplied by the *appliance* manufacturer where one is required, a draft hood shall be installed, shall be of a *listed* or *approved* type and, in the absence of other instructions, shall be of the same size as the *appliance* flue collar. Where a draft hood is required with a conversion burner, it shall be of a *listed* or *approved* type.

503.12.3 Draft control devices. Where a draft control device is part of the *appliance* or is supplied by the *appliance* manufacturer, it shall be installed in accordance with the manufacturer's instructions. In the absence of manufacturer's instructions, the device shall be attached to the flue collar of the *appliance* or as near to the *appliance* as practical.

503.12.4 Additional devices. *Appliances* requiring a controlled chimney draft shall be permitted to be equipped with a *listed* double-acting barometric-draft regulator installed and adjusted in accordance with the manufacturer's instructions.

503.12.5 Location. Draft hoods and barometric draft regulators shall be installed in the same room or enclosure as the *appliance* in such a manner as to prevent any difference in pressure between the hood or regulator and the *combustion air* supply.

503.12.6 Positioning. Draft hoods and draft regulators shall be installed in the position for which they were designed with reference to the horizontal and vertical planes and shall be located so that the relief opening is not obstructed by any part of the *appliance* or adjacent construction. The *appliance* and its draft hood shall be located so that the relief opening is accessible for checking vent operation.

503.12.7 Clearance. A draft hood shall be located so its relief opening is not less than 6 inches (152 mm) from any surface except that of the *appliance* it serves and the venting system to which the draft hood is connected. Where a greater or lesser *clearance* is indicated on the *appliance* label, the *clearance* shall be not less than that specified on the label. Such clearances shall not be reduced.

503.13 Manually operated dampers. A manually operated damper shall not be placed in the vent connector for any *appliance*. Fixed baffles and balancing baffles shall not be classified as manually operated dampers.

503.13.1 Balancing baffles. Balancing baffles shall be *listed* in accordance with **UL 378** and shall be mechanically locked in the desired position before placing the *appliance* in operation.

503.14 ~~Automatically operated~~ Automatic vent dampers. An ~~automatically operated~~ automatic vent damper shall be *listed*.

503.15 Obstructions. Devices that retard the flow of vent gases shall not be installed in a vent connector, chimney or vent. The following shall not be considered as obstructions:

1. Draft regulators and safety controls specifically *listed* for installation in venting systems

iron or nonferrous material flanges.

403.11.6 Flange facings. Standard facings shall be permitted for use under this code. Where 150-pound (1034 kPa) pressure-rated steel flanges are bolted to Class 125 cast-iron flanges, the raised face on the steel flange shall be removed.

403.11.7 Lapped flanges. Lapped flanges shall be used only above ground or in exposed locations accessible for inspection.

403.12 Flange gaskets. Material for gaskets shall be capable of withstanding the design temperature and pressure of the *piping* system, and the chemical constituents of the gas being conducted, without change to its chemical and physical properties. The effects of fire exposure to the joint shall be considered in choosing material. Acceptable materials include metal (plain or corrugated), composition, aluminum "O" rings, spiral wound metal gaskets, rubber-faced phenolic and elastomeric. Where a flanged joint is opened, the gasket shall be replaced. Full-face flange gaskets shall be used with all nonsteel flanges.

403.12.1 Flanges. When flanges are separated and before gaskets are replaced, the following shall be met:

1. Flange faces shall be cleaned.
2. Flange surfaces shall be inspected for pitting, corrosion and other surface defects.
3. Flanges that contain pitting, corrosion and other surface defects on faces shall be repaired or replaced.

~~**403.12.1**~~**403.12.2 Metallic gaskets.** Metallic flange gaskets shall be in accordance with **ASME B16.20**.

~~**403.12.2**~~**403.12.3 Nonmetallic gaskets.** Nonmetallic flange gaskets shall be in accordance with **ASME B16.21**.

SECTION 404 (IFGC)
PIPING SYSTEM INSTALLATION

404.1 Installation of materials. Materials used shall be installed in strict accordance with the standards under which the materials are accepted and *approved*. In the absence of such installation procedures, the manufacturer's instructions shall be followed. Where the requirements of referenced standards or manufacturer's instructions do not conform to minimum provisions of this code, the provisions of this code shall apply.

404.2 CSST. CSST *piping* systems shall be installed in accordance with the terms of their approval, the conditions of listing, the manufacturer's instructions and this code.

404.3 Prohibited locations. *Piping* shall not be installed in or through a ducted supply, return or exhaust, or a clothes chute, chimney or gas vent, dumbwaiter or elevator shaft. *Piping* installed downstream of the *point of delivery* shall not extend through any townhouse unit other than the unit served by such *piping*.

404.4 Piping in solid partitions and walls. Concealed *piping* shall not be located in solid partitions and solid walls, unless installed in a chase or casing.

404.5 Fittings in concealed locations. Fittings installed in concealed locations shall be limited to the following types:

1. Threaded elbows, tees, couplings, plugs and caps.
2. Brazed fittings.

Combustible gas detectors shall be capable of indicating the presence of fuel gas.

406.7.3 Purging appliances and equipment. After the *piping* system has been placed in operation, *appliances* and *equipment* shall be purged before being placed into operation.

406.7.3.1 Abandoned fuel gas piping. Where fuel gas piping is removed from service for an indefinite time period, it shall be purged.

SECTION 407 (IFGC)
PIPING SUPPORT

407.1 General. *Piping* shall be provided with support in accordance with **Section 407.2**.

407.2 Design and installation. *Piping* shall be supported with ~~metal~~ pipe hooks, ~~metal~~ pipe straps, ~~metal~~ bands, ~~metal~~ brackets, ~~metal~~ hangers or building structural components, suitable for the size of *piping*, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration. *Piping* shall be anchored to prevent undue strains on connected *appliances* and shall not be supported by other *piping*. Pipe hangers and supports shall conform to the requirements of **MSS SP-58** and shall be spaced in accordance with **Section 415**. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the *piping* between anchors. The components of the supporting *equipment* shall be designed and installed so that they will not be disengaged by movement of the supported *piping*.

SECTION 408 (IFGC)
DRIPS AND SLOPED PIPING

408.1 Slopes. *Piping* for other than dry gas conditions shall be sloped not less than $^1/_4$ inch in 15 feet (6.3 mm in 4572 mm) to prevent traps.

408.2 Drips. Where wet gas exists, a drip shall be provided at any point in the line of pipe where condensate could collect. A drip shall be provided at the outlet of the *meter* and shall be installed so as to constitute a trap wherein an accumulation of condensate will shut off the flow of gas before the condensate will run back into the *meter*.

408.3 Location of drips. Drips shall be provided with *ready* access to permit cleaning or emptying. A drip shall not be located where the condensate is subject to freezing.

408.4 Sediment trap. Where a sediment trap is not incorporated as part of the *appliance*, a sediment trap shall be installed downstream of the *appliance* shutoff valve as close to the inlet of the *appliance* as practical. The sediment trap shall be either a tee fitting having a capped nipple of any length installed vertically in the bottommost opening of the tee as illustrated in **Figure 408.4** or other device *approved* as an effective sediment trap. Illuminating *appliances*, ranges, clothes dryers, decorative vented *appliances* for installation in vented *fireplaces*, gas fireplaces and outdoor grills need not be so equipped.

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Fuel Gas

12

P11650	/FG8-21				
Date Submitted	05/14/2024	**Section**	103	**Proponent**	Mo Madani
Chapter	3004	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments Yes

Related Modifications

FBC - FG/D.3

Summary of Modification

Modifies text of SECTION D103 GAS PIPING AND CONNECTIONS INSPECTIONS.

Rationale

See attached

1st Comment Period History

P11650-G1	Proponent	Mo Madani	Submitted	5/18/2024 9:46:25 AM	Attachments	No

Comment:

Agree

P11650Text Modification

See attached

Page: 1

Mod11650_TextOfModification.pdf

P11650Text Modification

FG8-21

Original Proposal

IFGC: SECTION D103

Proponents: Pennie L Feehan, Pennie L Feehan Consulting, Copper Development Association (penniefeehan@me.com)

2021 International Fuel Gas Code

Revise as follows:

SECTION D103 GAS PIPING AND CONNECTIONS INSPECTIONS.

1. *Leak Checks*. Conduct a test for gas leakage using either a non-corrosive leak detection solution or a CGD confirmed with a leak detection solution.

   The preferred method for leak checking is by use of gas leak detection solution applied to all joints. This method provides a reliable visual indication of significant leaks.

   The use of a CGD in its audio sensing mode can quickly locate suspect leaks but can be overly sensitive indicating insignificant and false leaks. All suspect leaks found through the use of a CGD should be confirmed using a leak detection solution.

   Where gas leakage is confirmed, the owner should be notified that repairs must be made. The inspection should include the following components:

   a. All gas *piping* fittings located within the *appliance* space.

   b. *Appliance* connector fittings.

   c. *Appliance* gas valve/regulator housing and connections.

2. *Appliance Connector*. Verify that the *appliance* connection type is compliant with Section 411 of the International Fuel Gas Code. Inspect flexible *appliance* connections to determine if they are free of cracks, corrosion and signs of damage. Verify that there are no uncoated ~~brass~~ copper alloy connectors. Where connectors are determined to be unsafe or where an uncoated~~brass~~ copper alloy connector is found, the appliance shutoff valve should be placed in the off position and the owner notified that the connector must be replaced.

3. *Piping Support*. Inspect *piping* to determine that it is adequately supported, that there is no undue stress on the*piping*, and if there are any improperly capped pipe openings.

4. *Bonding*. Verify that the electrical bonding of gas*piping* is compliant with Section 310 of the International Fuel Gas Code.

Reason: This proposal changes brass to the proper term copper alloy.

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

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This minor change simply aligns the language in the code with previous code changes across all the codes in the last few cycles. (11-0)

Page: 1

Mod_11650_Text_FG8-21.pdf

P11650Text Modification

Final Hearing Results

FG8-21 AS

Page: 2

Mod_11650_Text_FG8-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

13

P10884	/P4-21				
Date Submitted	03/08/2024	**Section**	202	**Proponent**	Mo Madani
Chapter	2	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments Yes

Related Modifications

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

Summary of Modification

Adds language for "service Sink"

Rationale

See attached

1st Comment Period History

P10884-G1

Proponent Gary Kozan Submitted 5/28/2024 11:24:38 AM Attachments No

Comment:

This is not an Overlap. Looking closely, you'll see that the final hearing result was for "As Modified", removing the words "general purpose". This definition now appears exactly the same as in the current FBC-Plumbing. That is because last cycle, the TAC knew this change was coming, and proactively introduced it into the FBC to avoid potential conflict in the field. Although I support this change, there is really no need to approve it, since it already appears in our code.

P10884Text Modification

See attached

Page: 1

Mod10884_TextOfModification.pdf

P10884Text Modification

P4-21

Original Proposal

IPC: SECTION 202 (New)

Proponents: Richard Grace, Fairfax County, Virginia, Virginia Plumbing and Mechanical Inspectors Association (VPMIA) and Virginia Building and Code Officials Association (VBCOA) (richard.grace@fairfaxcounty.gov)

2021 International Plumbing Code

Add new definition as follows:

SERVICE SINK. A general purpose sink exclusively intended to be used for facilitating the cleaning of a building or tenant space.

Reason: The only specific physical characteristic currently defining a service sink is that it shall have a minimum 1-1/2 inch trap per Table 709.1. This requirement is the same as a "kitchen sink" and "sink" in Table 709.1. As a result the code does not appear to prohibit the use of a kitchen sink to be designated as the minimum fixture service sink. To alleviate the possibility of sinks, which may be used for dishwashing, food preparation or handwashing, from being appropriated for building cleaning and associated caustic products, the definition indicates the service sink as a specific fixture “exclusively” intended for building cleaning.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change should not increase the cost of construction unless a project had intended to use a kitchen sink or other hand sink as the intended service sink.

Public Hearing Results

Committee Action **As Modified**

Committee Modification: SERVICE SINK. A ~~general pupose~~ sink exclusively intended to be used for facilitating the cleaning of a building or tenant space.

Committee Reason: For the Modification: The term "general purpose" was removed as it is much too broad, allowing nearly any "sink" to serve as a service sink. That is not the intent.
For the proposal As Modified: This subject has been an issue in the code for a long time and needs addressed. Note that definition indicates exclusively intended (not exclusively "used" which would limit a service sink from being used to also capture A/C condensate as a secondary function.) (1-3)

Final Hearing Results

P4-21 AM

Page: 1

Mod_10884_Text_P4-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

P10885	/P5-21 Part I				14
Date Submitted	03/08/2024	**Section**	202	**Proponent**	Mo Madani
Chapter	2	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds clarifying language and definitions for toilet facilities

Rationale

See attached

1st Comment Period History

P10885-G1

Proponent Mo Madani Submitted 5/21/2024 3:44:29 PM Attachments Yes

Comment:

The attached I-Code modification was not uploaded by mistake. Mod - classification - Overlap Original text of mod is not consistent with that of the 2023 FBC-P.

1st Comment Period History

P10885-G2

Proponent Gary Kozan Submitted 5/28/2024 11:49:07 AM Attachments No

Comment:

I am in favor of this change, which adds definitions for multiple-user and single-user toilet facilities, as well as for family or assisted-use toilet facilities and bathing rooms. But I am confused by General Comment G1, which seems to pertain to a different code change P3-21, rather than P5-21

P10885Text Modification

See attached

Page: 1

Mod10885_TextOfModification.pdf

P5-21 Part I

Original Proposal

IPC: SECTION 202, SECTION 202 (New), (New)

Proponents: Sarah Rice, The Preview Group, The Preview Group (srice@preview-group.com)

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

2021 International Plumbing Code

Revise as follows:

TOILET FACILITY. A room or space that contains not less than one water closet and one lavatory.

Multiple-user toilet facility.

.

A toilet facility intended to be used by multiple occupants. Such facilities have more than one water closet and one lavatory. Each water closet is located in its own compartment that is created by vertical partitions.

Multiple-user toilet facility.

.

A toilet facility intended to be used by multiple occupants. Such facilities have more than one water closet and one lavatory. Each water closet is located in its own compartment that is created by vertical partitions.

Single-user toilet facility

.

A toilet facility intended to be used by a single occupant and that contains not less than one water closet and one lavatory.

Single-user toilet facility

.

A toilet facility intended to be used by a single occupant and that contains not less than one water closet and one lavatory.

Add new definition as follows:

Multiple-user toilet facility.

.

A toilet facility intended to be used by multiple occupants. Such facilities have more than one water closet and one lavatory. Each water closet is located in its own compartment that is created by vertical partitions.

Multiple-user toilet facility.

.

A toilet facility intended to be used by multiple occupants. Such facilities have more than one water closet and one lavatory. Each water closet is located in its own compartment that is created by vertical partitions.

FAMILY OR ASSISTED-USE TOILET FACILITY

.

A room separate from other toilet facilities intended to be used by either sex, families and those needing assisted care having; an independent entrance, not less than one adult-height water closet, one adult-height lavatory, and no more than one urinal, one child height water closet and one child height lavatory.

Multiple-user toilet facility.

P10885Text Modification

.

A toilet facility intended to be used by multiple occupants. Such facilities have more than one water closet and one lavatory. Each water closet is located in its own compartment that is created by vertical partitions.

FAMILY OR ASSISTED-USE BATHING ROOM

.

A room separate from other bathing rooms intended to be used by either sex, families and those needing assisted care having; an independent entrance, no less than one shower or bathtub, one adult-height water closet and one adult-height lavatory, and no more than one urinal, one child height water closet and one child height lavatory.

Single-user toilet facility

.

A toilet facility intended to be used by a single occupant and that contains not less than one water closet and one lavatory.

Single-user toilet facility

.

A toilet facility intended to be used by a single occupant and that contains not less than one water closet and one lavatory.

Single-user toilet facility

.

A toilet facility intended to be used by a single occupant and that contains not less than one water closet and one lavatory.

Reason: This is a companion code change to one being submitted to the IBC for Section 202
Currently the IPC and IBC have so many terms for so many different types of toilet rooms that I have come to refer to it as Dysfunctional Toilet Terminology. It is an issue that has the potential to impact almost every code in the ICC family of codes, but primarily in the IPC and IBC. I am going to start this discussion by venting my frustration regarding the terminology disconnect there is in the I-Codes with regard to plumbing fixture types and requirements.

Somewhere along the road to sorting this out someone thought the answer was to create the term “toilet facility” – but I beg to differ. The IPC definition is:

TOILET FACILITY. A room or space that contains not less than one water closet and one lavatory. (IPC Chapter 2)

But if it was the intent of the plumbing code to require any space that has the term “toilet facility” to have a minimum of 1 WC & 1 lavatory, then why is that not stated in Chapter 4 of the IPC and Chapter 29 of the IBC – and NOT just within the definition–. But that horse has left the building so let' move on.

But if you read the definition of Toilet Facility closely it is not saying thatonly a single WC and a single lavatory is allowed in a “room,” but rather to be a Toilet Facility there must be at least one WC and one lavatory - it is not prohibiting the placement of any other type of plumbing fixture from that room. OK, so I get that, but if this is the description of Toilet Facility then what is to be in a room that has one of the following names:

- Family-toilet room
- Assisted-use toilet room
- Multi-user user facilities
- single-user toilet facilities
- single user bathing rooms (403.1.2)
- family or assisted-use toilet and bathing rooms (403.1.2)f
- Family or assisted-use toilet facilities
- What is a “bathing room” anyway? It is not a defined term.

The start to the end I propose is with the acceptance of the definition being proposed in this code change. With the incorporation of the the proposed terms there is a start to making it easier for the code user to know what types of fixtures are to be in each type of "space."

The new terms "Single user toilet facility" and "Multi-user toilet facility" are intended to distinguish when the code speaks to a toilet facility intended to be used by a single person vs one with multiple sets of plumbing fixtures.

Page: 2

Mod_10885_Text_P5-21 Part I.pdf

P10885Text Modification

The new terms "FAMILY OR ASSISTED-USE TOILET FACILITY" and "FAMILY OR ASSISTED-USE BATHING ROOM" are not really new at all. The terms are found in both the IPC and IBC but are not given any context in which they should be applied. The definitions incorporate the intended function of the spaces along with the number and types of fixtures they should contain. These are based upon the language found IBC Section 1110.2.1.2 for FAMILY OR ASSISTED-USE TOILET FACILITY and in Section 1110.2.1.3 for FAMILY OR ASSISTED-USE BATHING ROOM.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a correlation and clarification of definitions between the IPC and IBC. Clarifications and correlations do not impact material or labor costs and therefore have no impact on the cost of construction.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
FAMILY OR ASSISTED-USE TOILET FACILITY. A room separate from other toilet facilities intended to be used by ~~either~~ all persons regardless of sex, families and those needing assisted care having; an independent entrance, not more ~~less~~ than one adult height water closet, not more than one adult-height lavatory, and is permitted to have ~~no more than~~ one urinal, one child height water closet and one child height lavatory.

FAMILY OR ASSISTED-USE BATHING ROOM. A room separate from other bathing rooms intended to be used by ~~either~~ all persons regardless of sex, families and those needing assisted care having; an independent entrance, ~~no less~~ not more than one shower or bathtub, not more than one adult-height water closet and one adult-height lavatory, and is permitted to have ~~no more than~~ one urinal, one child height water closet and one child height lavatory.

Committee Reason: For the modification: Provides more clarity and makes the terminology more consistent with other code callouts. (12-2)
For the proposal As Modified: The Committee agrees with the published reason statement. (8-6)

Final Hearing Results

P5-21 Part I AM

Page: 3

Mod_10885_Text_P5-21 Part I.pdf

P10885-G1General Comment

P3-21

Original Proposal

IPC: SECTION 202

Proponents: Pennie L Feehan, Pennie L Feehan Consulting, Copper Development Association (penniefeehan@me.com)

2021 International Plumbing Code

Revise as follows:

COPPER ALLOY. A homogenous mixture of two or more metals ~~alloy where the principle~~ in which copper is the primary component ~~is copper,~~ such as brass and bronze.

Reason: The proposal will uniform the definition with ISPSC and gives an example.

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

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This definition needs to be aligned with what is in the ISPSC. (13-1)

Final Hearing Results

P3-21 AS

Page: 1

Mod_10885_G1_General_P3-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

15

P10886	/P6-21 Part I

Date Submitted	03/08/2024	**Section**	305.6	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds language for protection from drywall screws

Rationale

See attached

1st Comment Period History

P10886-G1

Proponent Gary Kozan Submitted 5/28/2024 12:02:57 PM Attachments No

Comment:

I am opposed to this code change because it accomplishes absolutely nothing. It "cuts" shield plate language from section 305.6, and then "pastes" it into a new subsection 305.6.1. Totally pointless. And the proponent's reason statement offers no explanation.

P10886Text Modification

See attached

Page: 1

Mod10886_TextOfModification.pdf

P6-21 Part I

Original Proposal

IPC: 305.6, 305.6.1 (New)

Proponents: Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

THIS IS A 4 PART CODE CHANGE. PART I WILL BE HEARD BY THE PLUMBING CODE COMMITTEE. PART II WILL BE HEARD BY THE RESIDENTIAL PLUMBING CODE COMMITTEE. PART III WILL BE HEARD BY THE MECHANICAL CODE COMMITTEE. PART IV WILL BE HEARD BY THE FUEL GAS CODE COMMITTEE.
SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

305.6 Protection against physical damage. In concealed locations where piping, other than cast iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than $1^1/_4$ inches (32 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. ~~Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).~~ Such plates shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 2 inches (51 mm) above sole plates and below top plates.

Add new text as follows:

305.6.1 Shield plates. Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).

Reason: The safest place to install piping is in the middle of the wall. But in a typical 3-1/2 inch stud wall, even a 1/2-inch pipe (5/8-inch OD) ends up slightly nearer than the requisite 1-1/2 inch setback from either edge. Depending on enforcement, installers are often required to put shield plates on both sides of the stud. This makes no sense. By simply reducing the setback from 1-1/2 inches to 1-1/4 inches, both 1/2-inch and 3/4-inch piping can be safely installed in the center of the wall without triggering the need for shield plates on both sides. This encourages quality workmanship instead of penalizing it. The pipes are still safely out of range of drywall screws up to 1-1/2 inches long. This proposal is consistent with the National Electrical Code, which specifies a 1-1/4 inch setback from the edge of a stud. It is also consistent with the IRC, which also specifies a 1-1/4 inch setback. Note that the Uniform Plumbing Code allows a 1-inch distance before a shield plate is required . This proposal will bring consistency to the I-Codes.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 12.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Reducing the distance from the face of the stud for where shield plates are required could result in*fewer* plates needed for a project. The need for fewer plates would reduce cost of construction but that cost reduction would be insignificant.

Public Hearing Results

Committee Action **As Submitted**

P10886Text Modification

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results	
P6-21 Part I	AS

Mod_10886_Text_P6-21 Part I.pdf Page: 2

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

16

P10889	/P8-21

Date Submitted	03/08/2024	**Section**	305.8	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Adds requirements for expansive soil piping

Rationale

See attached

P10889Text Modification

See attached

Page: 1

Mod10889_TextOfModification.pdf

P8-21

Original Proposal

IPC: 305.8 (New), 305.8.1 (New), 305.8.2 (New)

Proponents: Robert Nicholas, Don Illingworth & Assoc., Inc., Structural Engineer Association of Texas (Robert@DiEngineers.com)

2021 International Plumbing Code

Add new text as follows:

305.8 Expansive Soil. Where expansive soil is identified but not removed under foundations, plumbing shall be protected in accordance with Section 305.8.1 or 305.8.2.

305.8.1 Non-Isolated Foundations. Under foundations with slabs that are structurally supported by a subgrade, it shall be permitted for plumbing to be buried.

305.8.2 2 Isolated Foundations. Under foundations with a slab or framing that structurally spans over an under-floor space which isolates the slab from the effects of expansive soil swelling and shrinking, the plumbing shall be suspended so that plumbing, hangers and supports are isolated, by adequate voidspace, from the effects of expansive soil swelling and shrinking.
To protect the voidspace, soil shall be sloped, benched or retained in accordance with an approved design methodology. It shall not be permitted for the plumbing, hangers and supports below the slab or below the framing to be in contact with soil or any assemblage of materials that is in contact with soil within the active zone. It shall not be permitted for a slab and plumbing to be lifted as an assembly to create the voidspace unless the under-floor space is a crawlspace with access to allow inspection of plumbing after lifting.

Materials subject to decay shall not be used for hangers, supports and soil retention systems. Materials subject to corrosion shall not be used for hangers, supports and soil retention systems unless protected in an approved manner.

Where plumbing transitions to a buried condition beyond the perimeter of the foundation, an adequately flexible expansion joint shall be provided in the plumbing.

Reason: Currently, the IPC does not explicitly require protection of piping, fittings, hangers, and supports from expansive soil. In some instances, millions of dollars of damages per facility to plumbing have been caused by expansive soil. This proposed change would require protection of piping, fittings, hangers, and supports from expansive soil under buildings to avoid these cases. Refer to the attached 14 page supporting document.

Cost Impact: The code change proposal will increase the cost of construction
Generally speaking, the following are estimated cost impacts:

- There will be no cost increase or decrease for buildings where there is no expansive soil or expansive soil is removed.
- There will be no cost increase or decrease for buildings where there is expansive soil but the foundation is a slab-on-ground. There will be no cost increase or decrease for buildings where there is expansive soil with a foundation over a crawl space, suspended and isolated utilities and flexible expansion joints at the transitions where plumbing becomes buried.
- There will be no cost increase or decrease for buildings where there is expansive soil with a foundation over carton void forms, suspended and isolated utilities and flexible expansion joints at the transitions where plumbing becomes buried.
- There might possibly be a minor cost decrease, less than approximately 0.1% of the total initial cost of construction for example, for buildings where there is expansive soil with a foundation over carton void forms, and the original design included proprietary systems that claim to provide a void but actually can impose loads onto the plumbing, hangers and/or supports, and where flexible expansion

P10889Text Modification

joints are not included at the transitions.

- There will be a relatively minor increase in the initial construction cost, less than approximately 0.1% of the total initial cost of construction for example, for buildings where there is expansive soil with a foundation over a crawl space, and the original design included a few areas with buried utilities and no flexible expansion joints at the transitions. However, for many cases there will be a reduction in maintenance costs that will more than offset the initial construction cost increase.
- There will be a definite increase in the initial construction cost, possibly approximately 1% of the total initial cost of construction for example, for buildings where there is expansive soil with a slab-on-void foundation, and the original design included buried utilities. However, for many cases there will be a reduction in maintenance costs that will more than offset the initial construction cost increase.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

305.8 Expansive Soil.

Where expansive soil is identified under buildings in accordance with Section 1803.5.3 of the International Building Code, but not removed ~~under foundations~~ in accordance with Section 1808.6.3 of the International Building Code, plumbing shall be protected in accordance with Section 305.8.1 or 305.8.2.

305.8.2~~2~~ Isolated Foundations.

Under foundations with a slab or framing that structurally spans over an under-floor space which isolates the slabor framing from the effects of expansive soil swelling and shrinking in accordance with Section 1808.6.1 of the International Building Code, the plumbing shall be suspended so that plumbing, hangers and supports are isolated, by a ~~adequate~~ voidspace, from the effects of expansive soil swelling and shrinking.

Exception: It shall be permitted for plumbing to be buried if the plumbing provides drainage of an under-floor space.

To protect the voidspace, soil shall be sloped, benched or retained in accordance with an approved design methodology.It shall not be permitted for the plumbing, hangers and supports below the slab or below the framing to be in contact with soil or any assemblage of materials that is in contact with soil within the active zone. It shall not be permitted for a slab and plumbing to be lifted as an assembly to create the voidspace unless the under-floor space is a crawlspace with access to allow inspection of plumbing after lifting.

Exception: It shall be permitted for the piping, fittings, hangers, and supports below the slab or below the framing to be in contact with structural elements of the foundation that are designed to resist the effects of expansive soil swelling and shrinking in accordance with Section 1808.6.1 of the International Building Code.

Organic ~~M~~materials subject to decay shall not be used for hangers, supports and soil retention systems. Materials subject to corrosion shall not be used for hangers, supports and soil retention systems unless protected in an approved manner.

Where plumbing transitions to a buried condition beyond the perimeter of the foundation, an adequately flexible expansion joint shall be provided in the plumbing system to accommodate the effects of expansive soil swelling and shrinking.

Committee Reason: For the Modification: The Committee approved the modification as it cleans up some subjective terms and the exceptions make it clear about what was meant by plumbing underground. (10-4)

For the Proposal As Modified: This is an important topic that the code needs to address. (10-4)

Final Hearing Results

P8-21 AM

Page: 2

Mod_10889_Text_P8-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

17

P10890	/P9-21				
Date Submitted	03/08/2024	**Section**	306.2.4	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds language for tracer wire

Rationale

See attached

1st Comment Period History

P10890-G1

Proponent Gary Kozan Submitted 5/28/2024 5:18:51 PM Attachments No

Comment:

There is simply no need to require tracer wires on every new sewer line. Locating companies possess multiple means and methods for finding plastic sewers easily without a tracer wire. It's been done for years. Unlike other buried non-metallic piping such as gas and water lines, sewer cleanouts permit the easy insertion of a metal fish tape, or a sewer camera equipped with a sonde/beacon, to quickly identify the pipe's location and depth with far greater accuracy than an ungrounded tracer wire. These devices are ubiquitous in the marketplace. Plastic sewers have been around for more than 50 years. Locating them with today's technology is just not a problem. This code change should be Disapproved.

P10890Text Modification

See attached

Page: 1

Mod10890_TextOfModification.pdf

P10890Text Modification

P9-21

Original Proposal

IPC: 306.2.4 (New)

Proponents: Ted Williams, American Gas Association, American Gas Association (twilliams@aga.org)

2021 International Plumbing Code

Add new text as follows:

306.2.4 Tracer wire. For plastic sewer piping, an insulated copper tracer wire or other approved conductor shall be installed adjacent to and over the full length of the piping. Access shall be provided to the tracer wire or the tracer wire shall terminate at the cleanout between the building drain and building sewer. The tracer wire size shall be not less than 14 AWG and the insulation type shall be listed for direct burial.

Reason: The new provision that applies to buried plastic sewer piping requires a tracer wire in close proximity of the non-metallic sewer piping to assist in identifying the location of the buried pipe to avoid damaging the pipe when digging in the area of the underground pipe. This will help ensure that there will be no 3rd party damage during excavation in the area where the piping is located along with other utilities that may be in the same trench.

Cost Impact: The code change proposal will increase the cost of construction
Adding tracer wire to installations will contribute a minor cost of line installation.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee believes this is an enhancement for safety at minimal expense. There have been many instances of gas lines being cross-bored through through plastic sewer lines. Subsequent clearing of a blockage in the sewer can result in a disaster.(9-5)

Final Hearing Results

P9-21 AS

Page: 1

Mod_10890_Text_P9-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

18

P10897		/P10-21			
Date Submitted	03/08/2024	**Section**	308.5	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Removes requirement for brass pipe from Table 308.5

Rationale

See attached

P10897Text Modification

See attached

Page: 1

Mod10897_TextOfModification.pdf

P10897Text Modification

P10-21

Original Proposal

IPC: TABLE 308.5

Proponents: Pennie L Feehan, Pennie L Feehan Consulting, Copper Development Association (penniefeehan@me.com)

2021 International Plumbing Code

Revise as follows:

TABLE 308.5 HANGER SPACING

Portions of table not shown remain unchanged.

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
Acrylonitrile butadiene styrene (ABS) pipe	4	10[b]
Aluminum tubing	10	15
Brass pipe	10	10
Cast-iron pipe	5[a]	15
Chlorinated polyvinyl chloride (CPVC) pipe and tubing, 1 inch and smaller	3	10[b]
Chlorinated polyvinyl chloride (CPVC) pipe and tubing, 1 1/4 inches and larger	4	10[b]
Copper or copper-alloy pipe	12	10
Copper or copper-alloy tubing, 1 1/4-inch diameter and smaller	6	10
Copper or copper-alloy tubing, 1 1/2-inch diameter and larger	10	10
Cross-linked polyethylene (PEX) pipe, 1 inch and smaller	2.67 (32 inches)	10[b]
Cross-linked polyethylene (PEX) pipe, 1 1/4 inches and larger	4	10[b]
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	2.67 (32 inches)	4
Lead pipe	Continuous	4
Polyethylene/aluminum/polyethylene (PE-AL-PE) pipe	2.67 (32 inches)	4
Polyethylene of raised temperature (PE-RT) pipe, 1 inch and smaller	2.67 (32 inches)	10[b]
Polyethylene of raised temperature (PE-RT) pipe, 1 1/4 inches and larger	4	10[b]
Polypropylene (PP) pipe or tubing, 1 inch and smaller	2.67 (32 inches)	10[b]
Polypropylene (PP) pipe or tubing, 1 1/4 inches and larger	4	10[b]
Polyvinyl chloride (PVC) pipe	4	10[b]
Stainless steel drainage systems	10	10[b]
Steel pipe	12	15

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

a. The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.

b. For sizes 2 inches and smaller, a guide shall be installed midway between required vertical supports. Such guides shall prevent pipe movement in a direction perpendicular to the axis of the pipe.

Reason: This line is not necessary because brass is a copper alloy and is covered under the copper alloy lines.

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

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (13-1)

Page: 1

Mod_10897_Text_P10-21.pdf

P10897Text Modification

Final Hearing Results

P10-21 AS

Mod_10897_Text_P10-21.pdf Page: 2

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

19

P10899		/P13-21			
Date Submitted	03/08/2024	**Section**	311.1	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements f ANSI/CAN/IAPMO/ISO 30500

Rationale

See attached

P10899Text Modification

See attached

Page: 1

Mod10899_TextOfModification.pdf

P10899Text Modification

P13-21

Original Proposal

IPC: 311.1, ISO (New), IAPMO Chapter 15 (New)

Proponents: Edward R. Osann, Natural Resources Defense Council, Natural Resources Defense Council (eosann@nrdc.org); CJ Lagan, American Standard / LIXIL, LIXIL (cj.lagan@lixil.com); albert rubin, NCSU, self (rubin@ncsu.edu)

2021 International Plumbing Code

Revise as follows:

311.1 General. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewer type shall conform to PSAI Z4.3or to IAPMO/ISO 30500.

Add new text as follows:

Add new standard(s) as follows:

IAPMO

IAPMO Group
4755 E. Philadelphia Street
Ontario, CA 91761 USA

ANSI/CAN/IAPMO/ISO 30500-2019	Non-sewered sanitation systems - Prefabricated integrated treatment units - General Safety and performance requirements for design and testing

Reason: Currently, this section of the code requires toilet facilities to be provided for construction workers, and that if such toilets are of the non-sewered type, they must conform to standard PSAI Z4.3. This proposal allows (but does not require) an additional type of non-sewered toilet to be provided for construction workers -- a sanitation system meeting the requirements of ANSI/CAN/IAPMO/ISO 30500. To facilitate the commercialization of hi-tech toilets providing complete onsite treatment of human waste without connection to a sanitary drainage system or septic tank, an ISO standard was adopted in 2018 to establish the key performance attributes and test procedures. Standard 30500, *Non-sewered sanitation systems - Prefabricated integrated treatment units - General safety and performance requirements for design and testing*, sets performance requirements for solid and liquid outputs, odor, noise, air emissions, materials, safety, marking, and ergonomics, together with relevant test procedures for measuring the attainment of these requirements. This ISO standard that was adopted in identical form as a US and Canadian national standard in 2019.

Criteria for the functioning of the unit for the capture and treatment of sanitary waste are established by the ISO standard and do not need to be repeated in plumbing code language. It should be noted that the ISO standard was developed by an international group of scientists, engineers, and regulators to assure the highest levels of treatment would apply to all outputs (air, water, and solids) from the device. The microbiological reduction requirements for solid and liquid waste are based on the quantitative microbial risk assessment (QMRA) method recognized by the World Health Organization for this purpose.

With "Reinvented Toilets" meeting the 30500 standard now on the cusp of commercialization, the arrival of such toilets at job sites across the country can reasonably be expected by the time this code update is published and adopted by states and localities, e.g., 2025. Such units may be offered as portable units. Operators of portable toilets should have the option of providing essential sanitation for construction workers with a toilet meeting the 30500 standard.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change proposal adds an additional choice of equipment to satisfy the need for temporary toilet facilities for construction workers. But their use an option, not a requirement. Thus the proposal has no impact on the cost of construction.

Public Hearing Results

Page: 1

Mod_10899_Text_P13-21.pdf

P10899Text Modification

Committee Action **As Modified**

Committee Modification: 311.1 General. Toilet facilities shall be provided for construction workers and such facilities shall be maintained in a sanitary condition. Construction worker toilet facilities of the nonsewered type shall conform to PSAI Z4.3 or to IAPMO/ISO 30500.

Committee Reason: For the Modification: Corrects a typographical error to match the standard's title. (14-0)
For the proposal As Modified: Offers another option for construction worker toilet facilities. (14-0)

Final Hearing Results

P13-21 AM

Page: 2

Mod_10899_Text_P13-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

20

P10901		/P14-21			
Date Submitted	03/08/2024	**Section**	312.4	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new language for drainage and vent vacuum test

Rationale

See attached

P10901Text Modification

See attached

Page: 1

Mod10901_TextOfModification.pdf

P10901Text Modification

P14-21

Original Proposal

IPC: 312.4 (New)

Proponents: Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2021 International Plumbing Code

Add new text as follows:

312.4 Drainage and vent vacuum test. The portion of the drainage and vent system under test shall be evacuated of air by a vacuum type pump to achieve a uniform gauge pressure of negative 5 pounds per square inch or a negative 10 inches of mercury column (negative 34 kPa). This pressure shall be held without the removal of additional air for a period of 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperatures or the seating of gaskets shall be made prior to the beginning of the test period.

Reason: In the last code cycle, P11-18 Part II was approved for the IRC to include vacuum testing as an option. This proposal is to provide consistency with the IRC. This alternate test is a means for testing piping systems when the ambient temperatures are below freezing where water cannot be used for the test. There is no safety hazard in testing with a vacuum. The equipment to perform the test is readily available on the market and many contractors have this equipment to perform the test among their tools at present. This allowance will actually help to mitigate the cost of construction delays and prevent potential damage to piping systems when water is used for where air cannot be used for testing.
This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 16.

Cost Impact: The code change proposal will decrease the cost of construction
Providing more alternatives for complying with the code usually lowers the cost of construction. This would be especially true for geographic locations having freezing temperatures where water could not be used for testing without the added cost of antifreeze and the subsequent disposal costs.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (12-2)

Final Hearing Results

P14-21 AS

Page: 1

Mod_10901_Text_P14-21.pdf

P17-21 Part I

Original Proposal

IPC: TABLE 403.1

Proponents: Eirene Knott, BRR Architecture, Metropolitan Kansas City Chapter of the ICC (eirene.knott@brrarch.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE ISPSC COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a] (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
1	Assembly	Theaters and other buildings for the performing arts and motion pictures[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Nightclubs, bars, taverns, dance halls and buildings for similar purposes[d]	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
		Restaurants, banquet halls and food courts[d]	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		Casino gaming areas	1 per 100 for the first 400 and 1 per 250 for the remainder exceeding 400	1 per 50 for the first 400 and 1 per 150 for the remainder exceeding 400	1 per 250 for the first 750 and 1 per 500 for the remainder exceeding 750		—	1 per 1,000	1 service sink
		Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Passenger terminals and transportation facilities[d]	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
		Places of worship and other religious services[d]	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
		Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities[f]	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
		Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities[f]	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
2	Business	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, ambulatory care, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink[e]
3	Educational	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink
4	Factory and industrial	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		—	1 per 400	1 service sink
5	Institutional	Custodial care facilities	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Medical care recipients in hospitals and nursing homes	1 per room[c]		1 per room[c]		1 per 15	1 per 100	1 service sink per floor
		Employees in hospitals and nursing homes[b]	1 per 25		1 per 35		—	1 per 100	—
		Visitors in hospitals and nursing homes	1 per 75		1 per 100		—	1 per 500	—
		Prisons[b]	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
		Reformatories, detention centers, and correctional centers[b]	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
		Employees in reformitories, detention centers and correctional centers[b]	1 per 25		1 per 35		—	1 per 100	—
		Adult day care and child day care	1 per 15		1 per 15		1	1 per 100	1 service sink
6	Mercantile	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink[e]
7	Residential	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

P10901Text Modification

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
		Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage	Structures for the storage of goods, warehouses, storehouse and freight depots. Low and Moderate Hazard.	1 per 100		1 per 100		—	1 per 1,000	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the *International Building Code*.

b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted provided that each patient sleeping unit has direct access to the toilet room and provision for privacy for the toilet room user is provided.

d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e. For business and mercantile classifications with an occupant load of 15 or fewer, service sinks shall not be required.

f. The required number and type of plumbing fixtures for indoor and outdoor public swimming pools shall be in accordance with Section 609 of the International Swimming Pool and Spa Code.

Reason: For hotel/motel chains that provide small pools for their guests, a single user toilet/changing room should be sufficient as the hotel guests generally will change clothes in their hotel rooms. However, there is no language in the code that allows for simultaneous use in a situation like this. I believe the proposed language will provide for larger hotel/motels that may have "water parks" associated with them to provide more facilities while not requiring that same burden on the smaller hotel/motels with pools only for hotel/motel guests.

Cost Impact: The code change proposal will decrease the cost of construction
This language has the ability to decrease the cost of construction as it will require less plumbing fixtures.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This is a needed clarification for the coverage of indoor pools. (14-0)

Final Hearing Results

P17-21 Part I AS

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Mod_10901_Text_P14-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

21

P10924		/P28-21			
Date Submitted	03/08/2024	**Section**	310	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

implements a consistent use of the term "toilet facility"

Rationale

See attached

P10924Text Modification

See attached

Page: 1

Mod10924_TextOfModification.pdf

P10924Text Modification

P28-21

Original Proposal

IPC: SECTION 310, 310.1, 310.3, TABLE 403.1, 403.1.2, 403.1.3, 403.2, 403.3.1, 403.3.2, 403.3.5, 403.3.6, 403.4, 405.3.2, 405.3.4, 405.3.5

Proponents: Sarah Rice, The Preview Group, The Preview Group (srice@preview-group.com)

2021 International Plumbing Code

Revise as follows:

SECTION 310
~~WASHROOM AND~~ TOILET FACILITIES ~~ROOM~~ REQUIREMENTS

310.1 Light and ventilation. ~~Washrooms and toilet rooms~~ Toilet facilities shall be illuminated and ventilated in accordance with the *International Building Code* and *International Mechanical Code* .

310.3 Interior finish. Interior finish surfaces of toilet facilities ~~rooms~~ shall comply with the *International Building Code* .

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a] (See Sections 403.1.1 and 403.2)
Portions of table not shown remain unchanged.

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
5	Institutional	Medical care recipients in hospitals and nursing homes	1 per room[c]		1 per room[c]		1 per 15	1 per 100	1 service sink per floor

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the *International Building Code*.

b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c. A single-user toilet facility ~~occupant toilet room~~ with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted provided that each patient sleeping unit has direct access to the toilet room and provision for privacy for the toilet room user is provided.

d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e. For business and mercantile classifications with an occupant load of 15 or fewer, service sinks shall not be required.

f. The required number and type of plumbing fixtures for outdoor public swimming pools shall be in accordance with Section 609 of the International Swimming Pool and Spa Code.

403.1.2 Fixtures in Single-user toilet facilities and bathing room~~fixtures~~. The plumbing fixtures located in single-user toilet facility and single-user bathing rooms, including family or assisted-use toiletfacilities and bathing rooms that are required by Section 1110.2.1 of the International Building Code, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet facilities and bathing rooms, and family or assisted-use toiletfacilities ~~rooms~~ and bathing rooms shall be identified as being available for use by all persons regardless of their sex. The total number of fixtures shall be permitted to be based on the required number of separate facilities or based on the aggregate of any combination of single-user or separate facilities.

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P10924Text Modification

403.1.3 Lavatory distribution. Where two or more toilet facilities ~~rooms~~ are provided for each sex, the required number of lavatories shall be distributed proportionately to the required number of water closets.

403.2 Separate facilities. Where plumbing fixtures are required, separate toilet facilities shall be provided for each sex.

Exceptions:

1. Separate toilet facilities shall not be required for dwelling units and sleeping units.
2. Separate toilet facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate toilet facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.
4. Separate toilet facilities shall not be required in business *occupancies* in which the maximum occupant load is 25 or fewer.
5. Separate toilet facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2.
6. Separate toilet facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets is provided in accordance with Section 405.3.4. Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.

403.3.1 Access. The route to the *public* toilet facilities required by Section 403.3 shall not pass through kitchens, storage rooms or closets. Access to the required toilet facilities shall be from within the building or from the exterior of the building. The public shall have access to the required toilet facilities at all times that the building is occupied.

403.3.2 Prohibited ~~toilet room~~ location for toilet facilities. Toilet facilities ~~rooms~~ shall not open directly into a room used for the preparation of food for service to the public.

403.3.5 Pay toilet facilities. Where pay toilet facilities are installed, such toilet facilities shall be in excess of the required minimum toilet facilities. Required toilet facilities shall be free of charge.

403.3.6 Door locking. Where a toilet facility ~~room~~ is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet facilities ~~rooms~~.

403.4 Signage. Required *public* toilet facilities shall be provided with signs that designate the sex, as required by Section 403.2. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111 of the International Building Code.

405.3.2 Public lavatories. In employee and *public* toilet facilities ~~rooms~~, the required lavatory shall be located in the same room as the required water closet.

405.3.4 Water closet compartment. Each water closet utilized by the *public* or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

Exceptions:

1. Water closet compartments shall not be required in a single-occupant toilet room with a lockable door.
2. Toilet facilities ~~rooms~~ located in child day care facilities and containing two or more water closets shall be permitted to have one water closet without an enclosing compartment.
3. This provision is not applicable to toilet areas located within Group I-3 housing areas.

405.3.5 Urinal partitions. Each urinal utilized by the *public* or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm)

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P10924Text Modification

or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.

Exceptions:

1. Urinal partitions shall not be required in a single occupant or family/assisted-use toiletfacility ~~room~~ with a lockable door.
2. Toilet facilities ~~rooms~~ located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

Reason: This is one of several code changes which is intended to implement a consistent use of the term "toilet facility".

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a correlation code change between the IPC and IBC and has no affect on the the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This is a good cleanup of out-of-date terminology. (14-0)

Final Hearing Results

P28-21 AS

Page: 3

Mod_10924_Text_P28-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

22

P11086	/S196-22

Date Submitted	03/14/2024	**Section**	307.2	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Adds language for cutting notching and boring

Rationale

See attached

P11086Text Modification

See attached

Page: 1

Mod11086_TextOfModification.pdf

P11086Text Modification

S196-22

Original Proposal

IBC: 2211.3 (New); IPC: 307.2, 307.3 (New), [BS] C101.5, [BS] C101.6; IMC: [BS] 302.5, [BS] 302.5.2, [BS] 302.5.3; IFGC: [BS] 302.6, [BS] 302.7

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

2021 International Plumbing Code

Revise as follows:

307.2 Cutting, notching and boring in wood framing. ~~or bored holes.~~ A wood framing member shall not be cut, notched or bored in excess of limitations specified in the *International Building Code*.

Add new text as follows:

307.3 Cutting, notching and boring in cold-formed steel framing. The cutting, notching and boring of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.

Delete without substitution:

~~[BS] C101.5 Cutting, notching and boring holes in cold-formed steel framing.~~ ~~Flanges and lips of load-bearing cold-formed steel framing members shall not be cut or notched. Holes in webs of load-bearing cold-formed steel framing members shall be permitted along the centerline of the web of the framing member and shall not exceed the dimensional limitations, penetration spacing or minimum hole edge distance as prescribed by the registered design professional. Cutting, notching and boring holes of steel floor/roof decking shall be as prescribed by the registered design professional.~~

~~[BS] C101.6 Cutting, notching and boring holes in nonstructural cold-formed steel wall framing.~~ ~~Flanges and lips of nonstructural cold-formed steel wall studs shall not be cut or notched. Holes in webs of nonstructural cold-formed steel wall studs shall be permitted along the centerline of the web of the framing member, shall not exceed 1 1/2 inches (38 mm) in width or 4 inches (102 mm) in length, and the holes shall not be spaced less than 24 inches (610 mm) center to center from another hole or less than 10 inches (254 mm) from the bearing end.~~

Reason: This proposal sets uniform requirements for field modifications to cold-formed steel framing members (cutting, notching, and boring holes) in accordance with AISI standards.
Currently, the IFGC, IMC, and IPC all provide guidance on modification of cold-formed steel framing elements within the path of utilities. Although the guidance provided by each code is similar, they are not identical in wording or scope and are handled differently within each document.

Differences include but are not limited to:

- IFGC, IMC: The cutting and notching criteria is within the main body of the code.
- IFGC, IMC: Includes direction for wood, steel, cold-formed steel, and non-structural cold-formed steel materials.
- IPC: Points to the IBC for cutting and notching criteria but provides Appendix C as an alternate.
- IPC Appendix C:
  - Includes some, but not all, cutting and notching criteria and limitations found within the IFGC and IMC.
  - Does not address steel and cold-formed materials.

This will provide clear and consistent criteria across all trades on how to field modify framing members and when modification of such members requires input from a design professional.

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Mod_11086_Text_S196-22.pdf

P11086Text Modification

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 a coordination of existing cutting, notching and boring provisions that are already used in practice but are not identical between codes or fully aligned with AISI standards.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
2021 International Building Code

2211.3 Cutting, and notching, ~~and boring~~. The cutting, and notching ~~and boring~~ of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.

2021 International Plumbing Code

307.3 Cutting, and notching ~~and boring~~ in cold-formed steel framing. The cutting, and notching ~~and boring~~ of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.

2021 International Mechanical Code

[BS]302.5 Cutting, and notching ~~and boring~~ in cold-formed steel framing. The cutting, and notching ~~and boring of~~ holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members. ~~The cutting, notching and boring of steel framing members shall comply with Sections 302.5.1 through 302.5.3.~~

2021 International Fuel Gas Code

[BS]302.6 Cutting, and notching ~~and boring~~ in cold-formed steel framing. The cutting, and notching ~~and boring~~ of holes in cold-formed steel framing members shall be in accordance with AISI S240 for structural members and AISI S220 for non-structural members.

Committee Reason: Approved as modified as the proposal coordinates the requirements across the I-Codes and adds the needed reference to ANSI S240. The modification correctly removes reference to boring for steel. (Vote: 13-0)

Final Hearing Results

S196-22 AM

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

23

P11087		/S224-22			
Date Submitted	03/14/2024	**Section**	307.2	**Proponent**	Mo Madani
Chapter	3	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Adds language for cutting notching and boring for wood framing

Rationale

See attached

P11087Text Modification

See attached

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P11087Text Modification

S224-22

Original Proposal

IBC: SECTION 2308.3 (New), 2308.3.1 (New), 2308.3.2 (New), 2308.3.2.1 (New), 2308.3.3 (New), 2308.3.4 (New), 2308.3.5 (New), 2308.4.2.4, 2308.5.9, 2308.5.10, 2308.7.4; IPC: 307.2, 307.3 (New), [BS] C101.1, [BS] C101.2, [BS] C101.3; IMC: [BS] 302.3, [BS] 302.3.1, [BS] 302.3.2, [BS] 302.3.3; IFGC: [BS] 302.3, [BS] 302.3.2, [BS] 302.3.3, [BS] 302.3.4

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

2021 International Plumbing Code

Revise as follows:

307.2 Cutting, notching and boring of cold-formed steel framing~~or bored holes~~. A cold-formed framing member shall not be cut, notched or bored in excess of limitations specified in the *International Building Code*.

Add new text as follows:

307.3 Cutting, notching and boring of wood framing. The cutting, notching and boring of structural wood framing members shall comply with Section 2308.3 of the *International Building Code.*

Delete without substitution:

~~**[BS] C101.1 Joist notching.** Notches on the ends of joists shall not exceed one-fourth the joist depth. Holes bored in joists shall not be within 2 inches (51 mm) of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third the depth of the joist. Notches in the top or bottom of joists shall not exceed one-sixth the depth and shall not be located in the middle third of the span.~~

~~**[BS] C101.2 Stud cutting and notching.** In exterior walls and bearing partitions, a wood stud shall not be cut or notched in excess of 25 percent of its depth. In nonbearing partitions that do not support loads other than the weight of the partition, a stud shall not be cut or notched in excess of 40 percent of its depth.~~

~~**[BS] C101.3 Bored holes.** The diameter of bored holes in wood studs shall not exceed 40 percent of the stud depth. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in nonbearing partitions. The diameter of bored holes in wood studs shall not exceed 60 percent of the stud depth in any wall where each stud is doubled, provided that not more than two such successive doubled studs are so bored. The edge of the bored hole shall be notcloser than $^{5}/_{8}$ inch (15.9 mm) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.~~

Reason: This proposal consolidates similar wood cutting, notching and boring criteria from the IFGC, IMC, IPC, and IBC into a single location in the IBC, and does not impose new requirements or restrict any practices currently allowed within the I-Codes. The proposed language draws from current language in the IPC, IMC, and IFGC and IBC provisions in the conventional light-framed section. The existing language was used to the greatest extent possible and relocated to minimize technical changes.
Within the IBC, existing wood framing notching, cutting and boring provisions have been relocated into a single new Section 2308.3. This reorganization into one location makes the IBC provisions easy to find and will provide clear and consistent criteria across all trades on how to field modify framing members and when modification of such members requires input from a design professional.

Structural framing members are frequently modified in the field by non-structural trades, to facilitate the installation of mechanical, electrical, plumbing, and other utilities. Especially in conventional light-framed wood construction, such modifications are rarely overseen by a design professional with knowledge of critical framing elements that should remain unmodified and the role they play within the structure.

It is unrealistic to expect field personnel to continually seek the guidance of a design professional for every framing member requiring modification. However, modifications of critical framing members have the potential to negatively impact the integrity of the structure and the utility systems that rely on that structure for support. The resulting structural deficiencies caused by field modifications to framing

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members may only be realized during significant high-wind, seismic, impact, or other loading events that, while within the normal structure design criteria, are outside every day operating conditions. At best, such deficiencies may be realized by local deformation of finish materials and at worst, by partial or full collapse of a structure.

Currently, the IFGC, IMC, IPC, and IBC all provide guidance on modification of structural framing elements within the path of utilities. Although the guidance provided by each code is similar, they are not identical in wording or scope and are handled differently within each document.

Differences include but are not limited to:

- IFGC, IMC: The cutting and notching criteria is within the main body of the code.
- IFGC, IMC: Includes direction for wood, steel, cold-formed steel, and non-structural cold-formed steel materials.
- IPC: Points to the IBC for cutting and notching criteria but provides Appendix C as an alternate. · IPC Appendix C
  - Includes some, but not all, cutting and notching criteria and limitations found within the IFGC and IMC.
  - Does not address steel and cold-formed materials.

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
The proposal consolidates existing and slightly varied provisions from multiple locations into one location within the wood chapter of the International Building Code.

Public Hearing Results

Committee Action **Disapproved**

Committee Reason: Disapproved as the proposal needs additional work as it affects multiple codes which address different multiple trades and it is appropriate to leave the requirements in each code as is currently done. (Vote: 11-3)

Final Hearing Results

S224-22 AS

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

P10851	/G344-21 Part III	24

Date Submitted	03/07/2024	**Section**	403.1	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds language for "sleeping Units"

Rationale

See attached

P10851Text Modification

See attached

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G44-21 Part III

Original Proposal

PART III - IPC: TABLE 403.1, 606.2;

Proponents: Daniel Willham, Fairfax County, Fairfax County (daniel.willham@fairfaxcounty.gov)

2021 International Plumbing Code

Revise as follows:

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a] (See Sections 403.1.1 and 403.2)

Portions of table not shown remain unchanged.

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
7	Residential	Hotels, motels, boarding houses (transient)	1 per *dwelling* or sleeping unit		1 per *dwelling* or sleeping unit		1 per *dwelling* or sleeping unit	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Apartment house	1 per dwelling *or sleeping* unit		1 per dwelling or *sleeping* unit		1 per dwelling or *sleeping* unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the *International Building Code*.

b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted provided that each patient sleeping unit has direct access to the toilet room and provision for privacy for the toilet room user is provided.

d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e. For business and mercantile classifications with an occupant load of 15 or fewer, service sinks shall not be required.

f. The required number and type of plumbing fixtures for outdoor public swimming pools shall be in accordance with Section 609 of the International Swimming Pool and Spa Code.

606.2 Location of shutoff valves. Shutoff valves shall be installed in the following locations:

1. On the fixture supply to each plumbing fixture other than bathtubs and showers in one- and two-family residential*occupancies*, and other than in individual dwelling or sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar *occupancies*.
2. On the water supply pipe to each sillcock.
3. On the water supply pipe to each appliance or mechanical equipment.

Reason: This change corrects discrepancies inadvertently created by past code changes. The description for R-1 occupancies used to

P10851Text Modification

only read "R-1 Residential occupancies where the occupants are primarily transient in nature ..." It did not mention sleeping units. The definition for *sleeping units* was added to the code to coordinate with the Fair Housing Act Guidelines (see code change E70-00) and did not involve the descriptions for residential occupancies in Chapter 3. Sleeping units was added to the descriptions of R-1 (2006 IBC) and R-2 (2003 IBC), in changes that do not appear in any code change proposal; these changes are also not marked as changes by bars in the margins. They appear to possibly have been made by the code correlation committee. However, no correction was made to the description of R-1, which, like R-2 occupancies, can also include both dwelling and sleeping units. This has left an apparent gap in the code for transient residential occupancies with dwelling units. This change resolves that by adding "or more than two dwelling units" to the description of R-1. Similar to the wording for the description for R-2, "or more than two dwelling units" avoids including R-3 residential occupancies and one- and two-family dwellings regulated under the IRC. This change also coordinates the references to sleeping units throughout the codes for R-1 occupancies to also include dwelling units. While doing this, a couple of instances of dwelling units for R-2 (without the mention of sleeping units) were found and also corrected to include sleeping units to coordinate with the description of R-2 occupancies.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification and coordination of the code which will not affect construction cost.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

G44-21 Part III AS

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

25

P10905	/P21-21

Date Submitted	03/08/2024	**Section**	403.1	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Sets basic language for occupant load

Rationale

See attached

P10905Text Modification

See attached

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P10905Text Modification

P21-21

Original Proposal

IPC: TABLE 403.1

Proponents: Pennie Feehan, Chair of PMGCAC, Chair of PMGCAC (PMGCAC@iccsafe.org)

2021 International Plumbing Code

Revise as follows:

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a] (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2) MALE	WATER CLOSETS (URINALS: SEE SECTION 424.2) FEMALE	LAVATORIES MALE	LAVATORIES FEMALE	BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
1	Assembly	Theaters and other buildings for the performing arts and motion pictures[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Nightclubs, bars, taverns, dance halls and buildings for similar purposes[d]	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
		Restaurants, banquet halls and food courts[d]	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		Casino gaming areas	1 per 100 for the first 400 and 1 per 250 for the remainder exceeding 400	1 per 50 for the first 400 and 1 per 150 for the remainder exceeding 400	1 per 250 for the first 750 and 1 per 500 for the remainder exceeding 750		—	1 per 1,000	1 service sink
		Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		Passenger terminals and transportation facilities[d]	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
		Places of worship and other religious services[d]	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
		Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
		Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities[f]	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
2	Business	Buildings for the transaction of business, non-medical professional services, other services involving merchandise, office buildings, banks, ~~ambulatory care,~~ light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink[e]
		Ambulatory care facilities and Outpatient clinics	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 50			1 per 100	1 service sink per floor
3	Educational	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink
4	Factory and industrial	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		—	1 per 400	1 service sink
5	Institutional	Alcohol and drug centers Congregate care facilities *Group homes* Halfway houses Social rehabilitation facilities Foster care facilities Footnote b	1 per 10 care recipients		1 per 10 care recipients		1 per 8 care recipients		
		Assisted living and residential board and care facilities with care recipients who receive Custodial care ~~facilities~~ — Sleeping units for care recipients Footnote c	1 per 2 ~~10~~ sleeping units		1 per 2 ~~8~~ sleeping units		1 per 8 sleeping units	~~1 per 100~~	~~1 service sink~~
		Assisted living and residential board and care facilities with care recipients who receive Custodial care ~~facilities~~ — Dwelling units for care recipients	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit		1 kitchen sink per dwelling unit

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NO.	CLASSIFICATION	DESCRIPTION		WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
				MALE	FEMALE	MALE	FEMALE			
			Employee facilities	1 per 60 care recipient units		1 per 60 care recipient units			1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipient units.		1 per 75 care recipient units.				
		Nursing homes	Sleeping units for care recipients Footnote c	1 per 2 care recipient sleeping units		1 per 2 care recipient sleeping units		1 per 8 care recipient sleeping units		
			Employee facilities	1 per 60 care recipient units		1 per 60 care recipient sleeping units			1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipient units.		1 per 75 care recipient sleeping rooms				
		~~Medical care recipients in hospitals and nursing homes~~ Footnote b	Sleeping units for care recipients	1 per ~~room~~[c] care recipient sleeping unit		1 per ~~room~~[c] care recipient sleeping unit		1 per ~~15~~ 100 care recipient sleeping unit	~~1 per 100~~	~~1 service sink per floor~~
			Care recipient treatment areas	1 per 25 care recipient treatment rooms		1 per 50 care recipient treatment rooms			1 per 100	
			Employee facilities	1 per 25 care recipient sleeping units or treatment room	1 per 35 care recipient sleeping units or treatment room	1 per 50 care recipient sleeping units or treatment room			1 per 100	1 service sink per floor
			Visitor facilities	1 per 75 care recipient sleeping room or treatment room	1 per 100 care recipient sleeping room or treatment room	1 per 50 care recipient sleeping room or treatment room			1 per 500	—
		Employees in hospitals and nursing homes[b]		1 per 25		1 per 35		—	1 per 100	—
		Visitors in hospitals and nursing homes		1 per 75		1 per 100		—	1 per 500	—
		Prisons[b]		1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
		Reformatories, detention centers, and correctional centers[b]	Cells	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
			Employees ~~in reformitories, detention centers and correctional centers~~[b]	1 per 25		1 per 35		—	1 per 100	—
		Adult day care and child day care		1 per 15		1 per 15		1	1 per 100	1 service sink
6	Mercantile	Retail stores, service stations, shops, salesrooms, markets and shopping centers		1 per 500		1 per 750		—	1 per 1,000	1 service sink[a]
7	Residential	Hotels, motels, boarding houses (transient)		1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)		1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Apartment house		1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		Congregate living facilities with 16 or fewer ~~persons~~ care recipients receiving custodial care		1 per 10 care recipients		1 per 10 care recipients		1 per 8 care recipients	~~1 per 100~~	1 ~~service~~ kitchen sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms		1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		Congregate living facilities with 16 or fewer persons		1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage	Structures for the storage of goods, warehouses, storehouse and freight depots. Low and Moderate Hazard.		1 per 100		1 per 100		—	1 per 1,000	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the *International Building Code*.

b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacen~~pt atient~~ care recipient sleeping units shall be permitted provided that each~~patient~~ care recipient sleeping unit has direct access to the toilet room and provision for privacy for the toilet room user is provided.

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d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e. For business and mercantile classifications with an occupant load of 15 or fewer, service sinks shall not be required.

f. The required number and type of plumbing fixtures for outdoor public swimming pools shall be in accordance with Section 609 of the International Swimming Pool and Spa Code.

Reason: The calculations for occupant load in the IBC does not distinguish between employees, customers, patients, inmates, etc.

The above recommendation for reformatories, detention centers and correctional centers translates the recommended staffing/patient ratio to the number of beds.

Example: A detention center has an average ratio of one employee to eight inmates (1:8). Assume a 1000 bed facility would require a minimum of 125 employees (1000/8=125). The 2021 IPC required 1 water closets per 25 employees and using the 1:8 ratio would required 5 water closets. 1,000 bed facility with 5 water closets for employees = 1 water closet required for every 200 beds. Lavatory criteria is 1.4 times the requirements for water closets (35/25 = 1.4). 200 beds*1.4 = 280 employees per lavatory, rounded up to 1 lavatory per 300 employees.

The calculation for the number of visitors to patient beds for hospitals and nursing homes was developed as follows;
1,000 bed facility
1 visitor per bed on average
1,000 visitors at 1 wc per 75 visitors = 13 water closets required
1,000 beds / 13 wac = 1 wc per 75 beds

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 22.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The design requirements for licensing these types of care facilities already require these minimum numbers of plumbing fixtures. This proposal simply brings the table in alignment with what is already being done by the care industry. Although the proposal adds more "requirements" to the code (leading one to believe that there is an increase in cost), the care industry has been providing these numbers of fixtures for some time. As no additional materials or labor result from stating what is already being done, there is no impact to the cost of construction.

Public Hearing Results

Committee Action **As Modified**

Committee Modification: TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a] (See Sections 403.1.1 and 403.2)

NO.	CLASSIFICATION		DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
				MALE	FEMALE	MALE	FEMALE			

P10905Text Modification

NO.	CLASSIFICATION		DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2) MALE	WATER CLOSETS (URINALS: SEE SECTION 424.2) FEMALE	LAVATORIES MALE	LAVATORIES FEMALE	BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
	1	Assembly	Theaters and other buildings for the performing arts and motion pictures[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
			Nightclubs, bars, taverns, dance halls and buildings for similar purposes[d]	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts[d]	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
			Casino gaming areas	1 per 100 for the first 400 and 1 per 250 for the remainder exceeding 400	1 per 50 for the first 400 and 1 per 150 for the remainder exceeding 400	1 per 250 for the first 750 and 1 per 500 for the remainder exceeding 750		—	1 per 1,000	1 service sink
			Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums[d]	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
			Passenger terminals and transportation facilities[d]	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
			Places of worship and other religious services[d]	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
			Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
			Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities[f]	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,520 and 1 per 60 for the remainder exceeding 1,520	1 per 200	1 per 150	—	1 per 1,000	1 service sink
2	Business		Buildings for the transaction of business, non-medical professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink[e]
			Ambulatory care facilities and Outpatient clinics	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50	1 per 50			1 per 100	1 service sink per floor
3	Educational		Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink
4	Factory and industrial		Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		—	1 per 400	1 service sink
5	Institutional		Alcohol and drug centers[b] Congregate care facilities[b] Group homes[b] Halfway houses[b] Social rehabilitation facilities[b] Foster care facilities[b]	1 per 10 care recipients		1 per 10 care recipients		1 per 8 care recipients		
			Assisted living and residential board and care facilities with care recipients who receive Custodial care — Sleeping units for care recipients[c]	1 per 2 sleeping units		1 per 2 sleeping units		1 per 8 sleeping units		

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P10905Text Modification

NO.	CLASSIFICATION		DESCRIPTION		WATER CLOSETS (URINALS: SEE SECTION 424.2) MALE	WATER CLOSETS (URINALS: SEE SECTION 424.2) FEMALE	LAVATORIES MALE	LAVATORIES FEMALE	BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
				Dwelling units for care recipients	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit		1 kitchen sink per dwelling unit
				Employee facilities	1 per 60 care recipient units		1 per 60 care recipient units			1 per 100	1 service sink per floor
				Visitor facilities	1 per 75 care recipient units.		1 per 75 care recipient units.				
			Nursing homes	Sleeping units for care recipients	1 per 2 care recipient sleeping units		1 per 2 care recipient sleeping units		1 per 8 care recipient sleeping units		
				Employee facilities	1 per 60 care recipient units		1 per 60 care recipient sleeping units			1 per 100	1 service sink per floor
				Visitor facilities	1 per 75 care recipient units.		1 per 75 care recipient sleeping rooms				
			Hospitals[b] ~~Footnote b~~	Sleeping units for care recipients	1 per care recipient sleeping unit		1 per care recipient sleeping unit		1 per 100 care recipient sleeping unit		
				Care recipient treatment areas	1 per 25 care recipient treatment rooms		1 per 50 care recipient treatment rooms			1 per 100	
				Employee facilities	1 per 25 care recipient sleeping units or treatment room	1 per ~~35~~ 25 care recipient sleeping units or treatment room	1 per 50 care recipient sleeping units or treatment room			1 per 100	1 service sink per floor
				Visitor facilities	1 per 75 care recipient sleeping room or treatment room	1 per ~~100~~ 75 care recipient sleeping room or treatment room	1 per 50 care recipient sleeping room or treatment room			1 per 500	—
			Employees in hospitals and nursing homes[b]		1 per 25		1 per 35		—	1 per 100	—
			Visitors in hospitals and nursing homes		1 per 75		1 per 100		—	1 per 500	—
			Prisons[b]		1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
			Reformatories, detention centers, and correctional centers[b]	Cells	1 per ~~15~~ cell		1 per ~~15~~ cell		1 per 15	1 per 100	1 service sink
				Congregate Living Facilities	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
				Employees	1 per 25		1 per 35		—	1 per 100	—
			Adult day care and child day care		1 per 15		1 per 15		1	1 per 100	1 service sink
6	Mercantile		Retail stores, service stations, shops, salesrooms, markets and shopping centers		1 per 500		1 per 750		—	1 per 1,000	1 service sink[e]
7	Residential		Hotels, motels, boarding houses (transient)		1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
			Dormitories, fraternities, sororities and boarding houses (not transient)		1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

Mod_10905_Text_P21-21.pdf Page: 5

P10905Text Modification

NO.	CLASSIFICATION		DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2) MALE	WATER CLOSETS (URINALS: SEE SECTION 424.2) FEMALE	LAVATORIES MALE	LAVATORIES FEMALE	BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
			Congregate living facilities with 16 or fewer care recipients receiving custodial care	1 per 10 care recipients		1 per 10 care recipients		1 per 8 care recipients		1 kitchen sink
			One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
			Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage		Structures for the storage of goods, warehouses, storehouse and freight depots. Low and Moderate Hazard.	1 per 100		1 per 100		—	1 per 1,000	1 service sink

Committee Reason: For the modification: The term "hospitals" was inadvertently left out and the fixture ratios for males and females needed to be the same as these facilities are typically provided as single user toilet room configuration. A congregate living facility row was added to the reformatories/detention centers row because most facilities do not have cells for individuals but have rooms for small to medium size groups of individuals.
For the proposal as modified: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P21-21 AM

Page: 6

Mod_10905_Text_P21-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

26

P10906	/P24-21 Part I				
Date Submitted	03/08/2024	**Section**	403.1.1	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds clarifying language regarding urinals

Rationale

See attached

1st Comment Period History

Proponent	Mo Madani	Submitted	5/21/2024 3:54:06 PM	Attachments	Yes

Comment:

10906-G1

The attached I-Code modification was not uploaded into the BCIS by mistake. Mod classification - Correlates Directly

P10906Text Modification

See attached

Page: 1

Mod10906_TextOfModification.pdf

P24-21 Part I

Original Proposal

IPC: 403.1.1, 403.2, 405.3.5

Proponents: Emma Gonzalez-Laders, NYS DOS Division of Building Standards and Codes, NYS DOS Division of Building Standards and Codes (emma.gonzalez-laders@dos.ny.gov); China Clarke, New York State Dept of State, New York State Dept of State (china.clarke@dos.ny.gov)

THIS IS A 2 PART CODE CHANGE. PART I AND PART II WILL BE HEARD BY PLUMBING CODE COMMITTEE.

2021 International Plumbing Code

Revise as follows:

403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table 403.1. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple *occupancies*, such fractional numbers for each *occupancy* shall first be summed and then rounded up to the next whole number.

Exceptions:

1. The total occupant load shall not be required to be divided in half where *approved* statistical data indicate a distribution of the sexes of other than 50 percent of each sex.
2. Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple-user facilities, each fixture type shall be in accordance with ICC A117.1 ~~and each urinal that is provided shall be located in a stall.~~
3. Distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 403.1.2.

403.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.
4. Separate facilities shall not be required in business *occupancies* in which the maximum occupant load is 25 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2.
6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by ~~both sexes~~ all persons regardless of sex and privacy is provided for water closets and urinals ~~is provided~~ in accordance with Section 405.3.4. ~~Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.~~

405.3.5 Urinal partitions. Each urinal utilized by the *public* or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm)

or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater. Urinals located in facilities designed for the use of all persons regardless of sex shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.

Exceptions:

1. Urinal partitions shall not be required in a single occupant or family/assisted-use toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

Reason: Sections 1210 and 2902 of the 2021 IBC are complementary to each other, thus, pointers are provided in Sections 2902 and 1210.1. However, their focus and purpose are different.
The purpose of Chapter 29 of the IBC, as stated in the commentary, is "to provide a building with the necessary**number** of plumbing fixtures of a specific type and quality." The commentary explains in great detail the methodology and difficulties in establishing the appropriate number of fixtures for each type of facility. Those difficulties continue beyond the code books as code users attempt to establish the appropriate number of fixtures for specific buildings and facilities. Much clarification is still needed in this section to enable users to make the appropriate determination.

On the other hand, and also according to the commentary, "the purpose of Chapter 12 is to establish minimum conditions for the**interior environment** of a building." Conditions that include not only the physical but also the psychological needs of the occupants, including space perception and privacy.

In keeping with that distinction, this proposal seeks to maintain issues pertaining to the interior environment of toilet facilities in Chapter 12 and to streamline Section 2902 to include only those requirements that address the calculation and the distribution of the number and type of plumbing fixtures required.

Also, in response to public comment received from design professionals, this proposal seeks to resolve the practical challenges and misuse that results from placing urinals in stalls and to remove unnecessarily repetitive language. Specifically, and in summary, this proposal seeks to:

1. Relocate the privacy requirements for urinals from exception2 in 2902.1.1 to Section 1210.3.2 of the 2021 IBC.
2. Relocate the performance language to accomplish privacy for urinals from exception 6 in Section 2902.2 to Section 1210.3.2 of the 2021 IBC.
3. Modify Section 1210.3.2 by incorporating the differences in language that were made to Section 2903.1.5 of the 2021 IBC in the last code cycle.
4. Since Section 2903.1.4 pertaining to privacy for water closets is a duplicate of Section 1210.3.1 and Section 2901.1 already includes a pointer to Section 1210, to remove the duplicate section in Chapter 29 of the 2021 IBC.
5. Since Section 2903.1.5 pertaining to privacy for urinals is a duplicate of Section 1210.3.2 and Section 2901.1 already includes a pointer to Section 1210, to remove the duplicate section in Chapter 29 of the 2021 IBC.

Sections 2903.1.4 and 2903.1.5 were modified by public comment during the last code cycle as Code Change No: G133-18. According to the proponent's justification, the proposal intended to bring *"language from the IPC into the IBC where designers that utilize the IBC can find this information more readily. [since] Most architectural firms do not have an IPC in their office."* However, those provisions already existed in the IBC and adding them to Chapter 29 was unnecessary.

This proposal neither introduces new nor eliminates existing language or code requirements. It seeks instead to consolidate all privacy provisions into one place (Chapter 12) and to ensure that the provisions included in Chapter 29 are consistent with the stated Scope of the Chapter.

Bibliography: Code Change Proposal G133-18 as Modified by Public Comment. Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC; David Collins.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal neither adds nor subtracts code requirements and simply re-organizes existing provisions and deletes duplicate provisions within the IBC.

P10906Text Modification

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
403.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.
4. Separate facilities shall not be required in business *occupancies* in which the maximum occupant load is 25 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2.
6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by all persons regardless of sex and privacy is provided for water closets ~~and urinals~~ in accordance with Section 405.3.4 and for urinals in accordance with Section 405.3.5.

Committee Reason: For the modification: The correction section number for urinals needed to be included. (14-0)
For the proposal As Modified: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P24-21 Part I AM

Page: 3

Mod_10906_Text_P24-21 Part I.pdf

P24-21 Part I

Original Proposal

IPC: 403.1.1, 403.2, 405.3.5

Proponents: Emma Gonzalez-Laders, NYS DOS Division of Building Standards and Codes, NYS DOS Division of Building Standards and Codes (emma.gonzalez-laders@dos.ny.gov); China Clarke, New York State Dept of State, New York State Dept of State (china.clarke@dos.ny.gov)

THIS IS A 2 PART CODE CHANGE. PART I AND PART II WILL BE HEARD BY PLUMBING CODE COMMITTEE.

2021 International Plumbing Code

Revise as follows:

403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table 403.1. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple *occupancies*, such fractional numbers for each *occupancy* shall first be summed and then rounded up to the next whole number.

Exceptions:

1. The total occupant load shall not be required to be divided in half where *approved* statistical data indicate a distribution of the sexes of other than 50 percent of each sex.
2. Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple-user facilities, each fixture type shall be in accordance with ICC A117.1 ~~and each urinal that is provided shall be located in a stall.~~
3. Distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 403.1.2.

403.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.
4. Separate facilities shall not be required in business *occupancies* in which the maximum occupant load is 25 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2.
6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by ~~both sexes~~ all persons regardless of sex and privacy is provided for water closets and urinals ~~is provided~~ in accordance with Section 405.3.4. ~~Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.~~

405.3.5 Urinal partitions. Each urinal utilized by the *public* or employees shall occupy a separate area with walls or partitions to provide privacy. The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches (762 mm). The walls or partitions shall begin at a height not greater than 12 inches (305 mm) from and extend not less than 60 inches (1524 mm) above the finished floor surface. The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches (457 mm)

or to a point not less than 6 inches (152 mm) beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater. Urinals located in facilities designed for the use of all persons regardless of sex shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.

Exceptions:

1. Urinal partitions shall not be required in a single occupant or family/assisted-use toilet room with a lockable door.
2. Toilet rooms located in child day care facilities and containing two or more urinals shall be permitted to have one urinal without partitions.

Reason: Sections 1210 and 2902 of the 2021 IBC are complementary to each other, thus, pointers are provided in Sections 2902 and 1210.1. However, their focus and purpose are different.
The purpose of Chapter 29 of the IBC, as stated in the commentary, is "to provide a building with the necessary**number** of plumbing fixtures of a specific type and quality." The commentary explains in great detail the methodology and difficulties in establishing the appropriate number of fixtures for each type of facility. Those difficulties continue beyond the code books as code users attempt to establish the appropriate number of fixtures for specific buildings and facilities. Much clarification is still needed in this section to enable users to make the appropriate determination.

On the other hand, and also according to the commentary, "the purpose of Chapter 12 is to establish minimum conditions for the**interior environment** of a building." Conditions that include not only the physical but also the psychological needs of the occupants, including space perception and privacy.

In keeping with that distinction, this proposal seeks to maintain issues pertaining to the interior environment of toilet facilities in Chapter 12 and to streamline Section 2902 to include only those requirements that address the calculation and the distribution of the number and type of plumbing fixtures required.

Also, in response to public comment received from design professionals, this proposal seeks to resolve the practical challenges and misuse that results from placing urinals in stalls and to remove unnecessarily repetitive language. Specifically, and in summary, this proposal seeks to:

1. Relocate the privacy requirements for urinals from exception2 in 2902.1.1 to Section 1210.3.2 of the 2021 IBC.
2. Relocate the performance language to accomplish privacy for urinals from exception 6 in Section 2902.2 to Section 1210.3.2 of the 2021 IBC.
3. Modify Section 1210.3.2 by incorporating the differences in language that were made to Section 2903.1.5 of the 2021 IBC in the last code cycle.
4. Since Section 2903.1.4 pertaining to privacy for water closets is a duplicate of Section 1210.3.1 and Section 2901.1 already includes a pointer to Section 1210, to remove the duplicate section in Chapter 29 of the 2021 IBC.
5. Since Section 2903.1.5 pertaining to privacy for urinals is a duplicate of Section 1210.3.2 and Section 2901.1 already includes a pointer to Section 1210, to remove the duplicate section in Chapter 29 of the 2021 IBC.

Sections 2903.1.4 and 2903.1.5 were modified by public comment during the last code cycle as Code Change No: G133-18. According to the proponent's justification, the proposal intended to bring *"language from the IPC into the IBC where designers that utilize the IBC can find this information more readily. [since] Most architectural firms do not have an IPC in their office."* However, those provisions already existed in the IBC and adding them to Chapter 29 was unnecessary.

This proposal neither introduces new nor eliminates existing language or code requirements. It seeks instead to consolidate all privacy provisions into one place (Chapter 12) and to ensure that the provisions included in Chapter 29 are consistent with the stated Scope of the Chapter.

Bibliography: Code Change Proposal G133-18 as Modified by Public Comment. Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC; David Collins.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal neither adds nor subtracts code requirements and simply re-organizes existing provisions and deletes duplicate provisions within the IBC.

P10906-G1General Comment

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
403.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:

1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile *occupancies* in which the maximum occupant load is 100 or fewer.
4. Separate facilities shall not be required in business *occupancies* in which the maximum occupant load is 25 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with Section 403.1.2.
6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by all persons regardless of sex and privacy is provided for water closets ~~and urinals~~ in accordance with Section 405.3.4 and for urinals in accordance with Section 405.3.5.

Committee Reason: For the modification: The correction section number for urinals needed to be included. (14-0)
For the proposal As Modified: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P24-21 Part I AM

Page: 3

Mod_10906_G1_General_P24-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

27

P10929		/P35-21			
Date Submitted	03/08/2024	**Section**	403.3.6	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Add exception for door locking

Rationale

See attached

P10929Text Modification

See attached

Page: 1

Mod10929_TextOfModification.pdf

P10929Text Modification

P35-21

Original Proposal

IPC: 403.3.6

Proponents: John Woestman, Kellen Company, Codes Director, Builders Hardware Manufacturers Assoc. (BHMA) (jwoestman@kellencompany.com)

2021 International Plumbing Code

Revise as follows:

403.3.6 Door locking. Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms.

Exception: The egress door of a multiple occupant toilet room shall be permitted to be lockable from inside the room where all the following criteria are met:

1. The egress door shall be lockable from the inside of the room only by authorized personnel by the use of a key or other approved means.
2. The egress door shall be readily openable from the egress side with not more than one releasing motion and without the use of a key or special knowledge or effort.
3. The egress door shall be capable of being unlocked from outside the room with a key or other approved means.

Reason: Complementing the requirements in 2021 IBC Section 1010.2.8 regarding locking arrangements in educational occupancies, the proposed exception would facilitate door locking of multiple occupant toilet rooms in emergency situations by authorized personnel. Our BHMA members are recognizing that schools desire the same intruder protection in multiple occupant toilet rooms as classrooms – but the code explicitly does not permit locking of the egress doors of multiple occupant toilet rooms.
Proposed Criteria 1 limits the ability to lock the egress doors of a multiple occupant toilet room to authorized individuals provided with the key or other approved means.

Proposed Criteria 2 is consistent with long standing requirements in the IBC to require doors in the means of egress to, from the egress side, be openable (unlock and unlatch) with not more than one releasing motion and without using a key, or special knowledge or effort.

Proposed Criteria 3 is consistent with locks permitted on classroom doors per IBC Section 1010.2.8.

An additional benefit of this proposed exception is the proposed exception would allow, for example, a male custodian to lock the door when cleaning the women's restroom, and prevent "surprise" use of the restroom.

The proposed exception prevents unauthorized personnel from locking the door from the inside, which meets the original intent of this section.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The exception is "shall be permitted" and non-mandatory. Of course, if building owners choose to install locks on egress doors from multiple occupant toilet rooms, a cost would be incurred.

Public Hearing Results

Committee Action **Disapproved**

Page: 1

Mod_10929_Text_P35-21.pdf

P10929Text Modification

Committee Reason: The proposal seems to be all over the map. For example, how can be required for key locking from the inside of the door where the door must be unlockable from the inside of the door without the use of a key? (12-2)

Public Comments

Public Comment 1

Proponents: John Woestman, Kellen Company, Codes Director, Builders Hardware Manufacturers Assoc. (BHMA) (jwoestman@kellencompany.com) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

403.3.6 Door locking. Where a toilet room is provided for the use of multiple occupants, the egress door for the room shall not be lockable from the inside of the room. This section does not apply to family or assisted-use toilet rooms.

Exception: The egress door of a multiple occupant toilet room shall be permitted to be lockable from inside the room where all the following criteria are met:

1. The egress door shall be lockable from the inside of the room only by authorized personnel by the use of a key or other approved means.
2. The egress door shall be readily openable from~~the egress side with not more than one releasing motion and without the use of a key or special knowledge or efforteffort.~~ the inside of the toilet room in accordance with IBC Section 1010.2.
3. The egress door shall be capable of being unlocked from outside the room with a key or other approved means.

Commenter's Reason: The proponent for this proposal failed to inform the committee members of the need and benefits of the proposed revisions, and failed to communicate the similarities of the proposed revisions to existing requirements in the IBC for door locking. The current IPC requires the egress door of a multiple occupant toilet room to not be lockable from inside the toilet room. For many occupancies, that's appropriate.

However, considering active shooter situations in K-12 schools, for example, there's a real concern that teachers with their students would not have a safe refuge from a shooter in a multi-occupant toilet room if the toilet room door cannot be lockable from inside the room. Picture a kindergarten teacher leading the class to the cafeteria when shots ring out, and the multi-occupant toilet room is the nearest potential place of refuge and safety.

This proposal, improved with the public comment modification, provides appropriate requirements via the proposed exception to 403.3.6 for building owners that wish to provide the ability for authorized personnel to lock the door from the inside of a multi-occupant toilet room. This proposed option is not limited to K-12 schools as the ability for authorized personnel to lock the door from inside of a toilet room may be desired in other occupancies.

The criteria for permitting the egress door of a multi-occupant toilet room to be lockable from inside the room includes:

1. Requiring the use of a key, or other approved means, to lock the door from the inside.

a. This restricts the ability to lock the door from the inside to only those authorized to do so. In a K-12 school, that could be teachers, administrators, and custodians. The provision for "other approved means" would permit, for example, electronic remote locking of doors for a building-wide lockdown.

2. Revising Item 2, and requiring the egress door to be openable from inside the toilet room in accordance with IBC Section 1010.2 – which is a current requirement for egress doors – is repeated here to stress the importance. IBC Section 1010.2 and subsections requires egress doors to be openable with a single motion, and without the use of a key or special knowledge or effort, and includes requirements for hardware height, locks and latches, etc.

Page: 2

Mod_10929_Text_P35-21.pdf

P10929Text Modification

a. Door hardware is readily available from multiple manufacturers that is lockable from inside the room only by authorized personnel (by a key, etc.), and unlockable by anybody inside the room without using a key, tool, special knowledge or effort.

3. Requiring the door to the multi-occupant toilet room to be unlockable from outside of the room by a key or other approved means ensures authorized personnel have the ability to gain access to the toilet room, should that need arise.

a. This requirement is consistent with current requirements in the IBC for Group E and Group B occupancies for locks permitted on classrooms, offices, and other occupied rooms per IBC Section 1010.2.8.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction
The exception is “shall be permitted” and non-mandatory. Of course, if building owners choose to install locks on egress doors from multiple occupant toilet rooms, a cost would be incurred.

Final Hearing Results

P35-21 AMPC1

Page: 3

Mod_10929_Text_P35-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

28

P10932		/P40-21			
Date Submitted	03/08/2024	**Section**	407.2	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Adds bathtub overflow clarification language

Rationale

See attached

P10932Text Modification

See attached

Page: 1

Mod10932_TextOfModification.pdf

P10932Text Modification

P40-21

Original Proposal

IPC: 407.2

Proponents: Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2021 International Plumbing Code

Revise as follows:

407.2 Bathtub waste outlets and overflows. Bathtubs shall be equipped with a waste outlet that is not less than 1 1/2 inches (38 mm) in diameter. The waste outlet shall be equipped with a watertight stopper. Where an overflow is installed in a bathtub, the piping from the overflow outlet shall be connected upstream of the fixture trap. The overflow outlet shall discharge to the trap whether the waste outlet is closed or open. ~~the overflow shall be not less than 1 1/2 inches (38 mm) in diameter~~.

Reason: There are several bathtubs that have overflows that are not a perfect circle and an 1-1/2 inch diameter requirement could prevent the installation of non-circular overflows. What is important is if a bathtub does have an overflow, that standing water is only permitted in the overflow when the fixture is filled to the point of overflow and that the overflow does not bypass the trap of the bathtub.
This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 17.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This change is only a clarification of the existing requirements to allow for newer designs of tub overflows on the market. Clarifications of the code do not have a cost impact.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: There can be a lot of different shapes for overflows. This is a manufacturer's decision. The code doesn't require an overflow. (9-5)

Final Hearing Results

P40-21 AS

Page: 1

Mod_10932_Text_P40-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

29

P10933		/P41-21			
Date Submitted	03/08/2024	**Section**	410.1	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Updates drinking fountain standards

Rationale

See attached

P10933Text Modification

See attached

Page: 1

Mod10933_TextOfModification.pdf

P10933Text Modification

P41-21

Original Proposal

IPC: 410.1

Proponents: Emily Toto, ASHRAE, ASHRAE (etoto@ashrae.org)

2021 International Plumbing Code

Revise as follows:

410.1 Approval. ~~Drinking fountains shall conform to ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.4, and *water coolers* shall conform to ASHRAE 18.~~ Drinking fountains, *water coolers* and *water dispensers* shall conform to NSF 61, Section 9. Drinking fountains shall also conform to ASME A112.19.1/CSA B45.2 or ASME A112.19.2/CSA B45.1. Electrically operated, refrigerated drinking *water coolers* and *water dispensers* shall be listed and labeled in accordance with UL 399.

Reason: ASHRAE 18 has been withdrawn so it is appropriate to remove from this list. The proposed modification to the sentence order is intended to clarify the requirements that apply to each product type.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal is editorial in nature and does not include new or revised requirements.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
410.1Approval. Drinking fountains, *water coolers* and *water dispensers* shall conform to NSF 61, Section 9. Drinking fountains shall also conform to ASME A112.19.1/CSA B45.2, ~~or~~ ASME A112.19.2/CSA B45.1 or ASME A112.19.3/CSA B45.4. Electrically operated, refrigerated drinking *water coolers* and *water dispensers* shall be listed and labeled in accordance with UL 399.

Committee Reason: For the modification: The A112 standard was inadvertently struck out and is needed. (14-0)
For the proposal As Modified: ASHRAE 18 is no longer a valid standard.(12-2)

Final Hearing Results

P41-21 AM

Page: 1

Mod_10933_Text_P41-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

30

P10934		/P46-21			
Date Submitted	03/08/2024	**Section**	412.10	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Changes standard to ASSE 1084

Rationale

See attached

P10934Text Modification

See attached

Page: 1

Mod10934_TextOfModification.pdf

P10934Text Modification

P46-21

Original Proposal

IPC: 412.10

Proponents: Jason Shank, ASSE International, ASSE International (jshank@plumbers55.com)

2021 International Plumbing Code

Revise as follows:

412.10 Head shampoo sink faucets.
Head shampoo sink faucets shall be supplied with hot water that is limited to not more than 120°F (49°C). Each faucet shall have integral check valves to prevent crossover flow between the hot and cold water supply connections. The means for regulating the maximum temperature shall be one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70.
2. A water heater conforming to ASSE~~1082~~ 1084.
3. A temperature-actuated, flow-reduction device conforming to ASSE 1062.

Reason: ASSE 1082 is designed for the following - This standard is for water heaters that control the outlet temperature to specific limits and are installed within a hot water distribution system but not at point-of-use.
Being this code section is in regards to point of use the ASSE 1082 is the wrong application. The correct application is the ASSE 1084 which is designed for the following - Water heaters covered by this standard have a cold water inlet connection, a means of heating the water, a means of controlling the water temperature, a means of limiting the temperature to a maximum of 120 °F (48.9 °C), and have an outlet connection to connect to downstream fixture fittings.
This water heater is intended to supply tempered water at point of use in order to reduce and control the risks of scalding. This water heater is not intended to limit thermal shock. This water heater is not a substitute for an automatic compensative valve complying with ASSE 1016 / ASME A112.1016 / CSA B125.16.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The change still is requiring a TLD.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

412.10 Head shampoo sink faucets. Head shampoo sink faucets shall be supplied with hot water that is limited to not more than 120°F (49°C). Each faucet shall have integral check valves to prevent crossover flow between the hot and cold water supply connections. The means for regulating the maximum temperature shall be one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70.
2. A water heater conforming to ASSE1082 or 1084.
3. A temperature-actuated, flow-reduction device conforming to ASSE 1062.

Page: 1

Mod_10934_Text_P46-21.pdf

P10934Text Modification

Committee Reason: For the modification: An ASSE 1082 water heater is not limited to serving multiple shampoo sinks. (14-0)
For the proposal As Modified: Both types of water heaters are acceptable for the application. (14-0)

Final Hearing Results

P46-21 AM

Page: 2

Mod_10934_Text_P46-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

31

P10935		/P47-21			
Date Submitted	03/08/2024	**Section**	412.2	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Updates to ASSE 1014 Standard

Rationale

See attached

P10935Text Modification

See attached

Page: 1

Mod10935_TextOfModification.pdf

P10935Text Modification

P47-21

Original Proposal

IPC: 412.2, ASSE Chapter 15 (New)

Proponents: Jason Shank, ASSE International, ASSE International

2021 International Plumbing Code

Revise as follows:

412.2 Hand showers. Hand-held showers shall conform to ASME A112.18.1/CSA B125.1. Hand-held showers shall provide backflow protection in accordance with ASME A112.18.1/CSA B125.1 or shall be protected against backflow by a device complying with ASME A112.18.3 or ASSE 1014.

Add new standard(s) as follows:

ASSE

ASSE International
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448

1014-2020 Performance Requirements for Backflow Prevention Devices for Hand-held Showers

Reason: By adding the ASSE 1014 to this section it allows another option of equal protection to this code section.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposed change adds an extra option.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: ASSE 1014 is the correct standard for a backflow device for a hand-held shower. (14-0)

Final Hearing Results

P47-21 AS

Page: 1

Mod_10935_Text_P47-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

32

P10936	/P49-21				
Date Submitted	03/08/2024	**Section**	419.6	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds language regarding soap dispensers

Rationale

See attached

1st Comment Period History

P10936-G1

Proponent Gary Kozan Submitted 5/28/2024 2:52:47 PM Attachments Yes

Comment:

Their sanitary role notwithstanding, soap dispensers are not considered plumbing and do not belong in the plumbing code. They are neither plumbing fixtures nor plumbing appliances. They are properly classified as bathroom accessories, which include other items such as mirrors, grab bars, toilet tissue dispensers, and paper towel dispensers. Florida Board of Health Chapter 64E-10 (attached) already mandates that soap (preferably liquid-type), toilet tissue and dispensers, and hand-drying towels or devices be provided in all public toilets and washrooms. Adding a soap dispenser requirement to the plumbing code would be both inappropriate and redundant, and could leave the mistaken impression that the plumber is now responsible for providing them, and that the plumbing inspector is responsible for enforcement. This code change should be Disapproved by the TAC.

P10936Text Modification

See attached

Page: 1

Mod10936_TextOfModification.pdf

P10936Text Modification

P49-21

Original Proposal

IPC: 419.6 (New)

Proponents: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., Bradley Corp. (JBENGINEER@aol.com); James Kendzel, American Supply Association, American Supply Association (jkendzel@asa.net)

2021 International Plumbing Code

Add new text as follows:

419.6 Soap dispenser. Each public lavatory shall have an accompanying soap dispenser.

Reason: One thing we have learned from the COVID-19 pandemic is the importance of washing ones hand with soap. Surprisingly, the code does not require soap dispensers for public lavatories. However, most engineers and architects specify soap dispensers. Plumbing contractors install soap dispensers when located in a counter top lavatory.
This is an important health issue that the Plumbing Code must address.

Bibliography: https://www.rwjf.org/en/blog/2020/03/a-happy-habit-of-healthy-handwashing.html
https://www.cdc.gov/handwashing/when-how-handwashing.html
https://globalhandwashing.org/wp-content/uploads/2020/09/GHD-2020-Fact-Sheet-English.pdf
https://globalhandwashing.org/wp-content/uploads/2020/10/Handwashing-Learning-Brief.pdf
https://globalhandwashing.org/wp-content/uploads/2015/03/Handwashing-Literature-Review_Jan-thru-June-2013_v2-clean-1.pdf

Cost Impact: The code change proposal will increase the cost of construction
Because this change will mandate the installation of soap dispensers, for those projects that providing soap dispenser was not part of the building's design feature, there will be added cost. The cost of the dispensers will vary depending on the type of dispenser chosen.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
419.6 Soap dispenser. Soap dispensers shall be provided for public lavatories. ~~Each public lavatory shall have an accompanying soap dispenser.~~

Committee Reason: For the modification: This is better/more concise language. There isn't a need to have a dispenser for each lavatory but only a soap dispenser be available at a public lavatory or public lavatories. (10-4)
For the proposal As Modified: This is necessary for good hygiene after using the toilet facilities. (13-1)

Final Hearing Results

P49-21 AM

Page: 1

Mod_10936_Text_P49-21.pdf

CHAPTER 64E-10
SANITARY PRACTICES FOR TOILETS AND WASHROOMS IN PUBLIC PLACES AND PLACES OF EMPLOYMENT

64E-10.001 General
64E-10.002 Special Requirements
64E-10.003 Cleanliness and Maintenance (Repealed)
64E-10.004 Soap, Towels and Toilet Tissue (Repealed)

64E-10.001 General.

(1) Toilets and washrooms shall be accessible to the public and employees, when the public place or place of employment is open and operating.

(2) The following sanitary practices shall be used for the operation and maintenance of toilets and washrooms in public places and places of employment:

(a) Floors and plumbing fixtures shall be cleaned and disinfected as needed, but no less than once a day;

(b) Plumbing fixtures and plumbing shall be maintained in good working order and free from chips, cracks, leaks, waste back-up, or seepage;

(c) Toilets and washrooms shall be furnished with soap, preferably liquid type, and single-use towels with a waste receptacle or a towel free automatic hand-drying device. The use of a common towel is prohibited; and,

(d) Each toilet shall be provided with toilet tissue and dispenser.

(3) For the purpose of this rule, the term "disinfected" means the application of a product registered with the United States Environmental Protection Agency as a tuberculocidal disinfectant used in accordance with the manufacturer's instructions.

Rulemaking Authority 381.006 FS. Law Implemented 381.006(6), (15) FS. History–New 10-18-89, Amended 8-7-96, Formerly 10D-10.035, Amended 12-2-15.

64E-10.002 Special Requirements.

Wherever temporary housing is provided to more than 60 people who are homeless as a result of displacement from their homes either by immigration, natural disaster, or financial hardship, the temporary housing facility shall provide a minimum of 1 toilet, 1 handwashing sink, and 1 shower for each 20 people or fraction thereof.

Rulemaking Authority 381.006 FS. Law Implemented 381.006(15) FS. History–New 10-18-89, Amended 7-22-92, 7-3-94, 8-7-96, Formerly 10D-10.041, Amended 12-2-15.

64E-10.003 Cleanliness and Maintenance.

Rulemaking Authority 381.0011(13), 381.006(14) FS. Law Implemented 381.006(6) FS. History–New 10-18-89, Amended 8-7-96, Formerly 10D-10.044, Repealed 12-2-15.

64E-10.004 Soap, Towels and Toilet Tissue.

Rulemaking Authority 381.0011(13), 381.006(14) FS. Law Implemented 381.006(6) FS. History–New 10-18-89, Amended 8-7-96, Formerly 10D-10.047, Repealed 12-2-15.

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

33

P10937		/P50-21			
Date Submitted	03/08/2024	**Section**	423.3	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Updates reference standard to ASSE 1084 from 1082

Rationale

See attached

P10937Text Modification

See attached

Page: 1

Mod10937_TextOfModification.pdf

P10937Text Modification

P50-21

Original Proposal

IPC: 423.3

Proponents: Jason Shank, ASSE International, ASSE International

2021 International Plumbing Code

Revise as follows:

423.3 Footbaths and pedicure baths. The water supplied to specialty plumbing fixtures, such as pedicure chairs having an integral foot bathtub and footbaths, shall be limited to not greater than 120ºF (49ºC) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or by a water heater complying with ASSE ~~1082~~ 1084.

Reason: ASSE 1082 is designed for the following - This standard is for water heaters that control the outlet temperature to specific limits and are installed within a hot water distribution system but not at point-of-use. Being this code section is in regards to point of use the ASSE 1082 is the wrong application. The correct application is the ASSE 1084 which is designed for the following - Water heaters covered by this standard have a cold water inlet connection, a means of heating the water, a means of controlling the water temperature, a means of limiting the temperature to a maximum of 120 °F (48.9 °C), and have an outlet connection to connect to downstream fixture fittings. This water heater is intended to supply tempered water at point of use in order to reduce and control the risks of scalding. This water heater is not intended to limit thermal shock. This water heater is not a substitute for an automatic compensative valve complying with ASSE 1016 / ASME A112.1016 / CSA B125.16.

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

The change still is requiring a TLD.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

423.3 Footbaths and pedicure baths. The water supplied to specialty plumbing fixtures, such as pedicure chairs having an integral foot bathtub and footbaths, shall be limited to not greater than 120ºF (49ºC) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or by a water heater complying with ASSE 1082 or 1084.

Committee Reason: For the modification: An ASSE 1082 water heater can serve multiple pedicure baths. (12-2)
For the proposal As Modified: Action is consistent with actions on P46-21 and P48-21. (12-2)

Final Hearing Results

P50-21 AM

Page: 1

Mod_10937_Text_P50-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

34

P10938	/P51-21

Date Submitted	03/08/2024	**Section**	423.4	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Updates water dispenser reference standards and language

Rationale

See attached

P10938Text Modification

See attached

Page: 1

Mod10938_TextOfModification.pdf

P10938Text Modification

P51-21

Original Proposal

IPC: 423.4 (New), ASSE Chapter 15 (New), UL Chapter 15 (New)

Proponents: Jason Shank, ASSE International, ASSE International

2021 International Plumbing Code

Add new text as follows:

423.4 Water Dispensers. All potable water dispensers directly connected to the plumbing system shall comply with one of the following:

1. Beverage faucets shall comply with ASME A112.18.1/CSA B125.1
2. Dispensers that supply electrically heated or cooled water shall comply with ASSE 1023
3. Electronic devices that heat water shall comply with UL 499

Add new standard(s) as follows:

ASSE

ASSE International
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448

1023-19 *Performance Requirements for Electrically Heated or Cooled Water Dispensers*

UL

UL LLC
333 Pfingsten Road
Northbrook, IL 60062-2096

499-2014 Standard for Electric Heating Appliances with revisions through February 23, 2017

Reason: Water dispensers are being used more and more. By adding this proposal it provides some regulations to what is allowed in the plumbing system.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal is enforcing what is common practice already in the industry.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

~~**423.4**~~ **412.12Electrically heated or cooled water dispensers**. All potable water dispensers directly connected to the plumbing system shall comply with one of the following:

1. ~~Beverage faucets shall comply with ASME A112.18.1/CSA B125.1~~
2. ~~Dispensers that supply~~ Eelectrically heated or cooled water dispensers shall comply with ASSE 1023.
3. ~~Electronic devices that heat water shall comply with UL 499~~

Page: 1

Mod_10938_Text_P51-21.pdf

P10938Text Modification

Chapter 15, UL

~~499-2014: Standard for Electric Heating Appliances with revisions through February 23, 2017~~

Committee Reason: For the modification: Clarified that UL 499 and ASME A112. 18.1/CSA B125.1 are not needed as both are referenced in the ASSE 1023 standard. (14-0)
For the proposal As Modified: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results	
P51-21	AM

Mod_10938_Text_P51-21.pdf Page: 2

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

35

P10939		/P52-21			
Date Submitted	03/08/2024	**Section**	424.2	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

requirements for urinals language in public restrooms

Rationale

See attached

P10939Text Modification

See attached

Page: 1

Mod10939_TextOfModification.pdf

P10939Text Modification

P52-21

Original Proposal

IPC: 424.2

Proponents: Emma Gonzalez-Laders, NYS DOS Division of Building Standards and Codes, NYS DOS Division of Building Standards and Codes (emma.gonzalez-laders@dos.ny.gov); China Clarke, New York State Dept of State, New York State Dept of State (china.clarke@dos.ny.gov)

2021 International Plumbing Code

Revise as follows:

424.2 Substitution for water closets. In each bathroom or toilet room, urinals shall not be substituted for more than 67 percent of the required water closets for males according to Table 403.1 in assembly and educational *occupancies*. Urinals shall not be substituted for more than 50 percent of the required water closets for males according to Table 403.1 in all other *occupancies*.

Reason: This proposal seeks to fix an unintended consequence of the addition of code provisions for multi-user facilities designed to serve all persons regardless of their sex without correlating those changes to the provisions of Section 424.2 of the 2021 IPC.
Provisions for the design of multi-user facilities designed to serve all persons regardless of their sex were introduced during the last code cycle. Exception 2 to Section 2902.1.1 of the 2021 IBC indicates that *"where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load."* Also, Section 424.2 of the IPC indicates that urinals may substitute up to 67% of the required water closets in assembly and educational spaces. However, for most assembly uses there is a different number of plumbing fixtures required for males and females in accordance with Table 403.1. Substituting 67% of **ALL** required fixtures would result in a larger number of urinals and a lower number of toilet fixtures available for females. For instance, if a multi-user facility were to be designed for use by all persons regardless of their sex for an A-1 occupancy with an occupant load of 1,000 persons, 8 toilet fixtures are required for females (1,000/125) and 4 toilet fixtures are required for males (1,000/65), of which, a maximum of 2 can be urinals. On the other hand, if urinals were to substitute for the toilet requirements for the 100% of the occupant load - applying exception 2 to Section 2902.1.1 of the 2021 IBC - then 8 fixtures could be urinals, leaving only 4 water closets for the use of all persons male and female.

This is contrary to the more than three-decade-long effort to provide "potty parity," or the equitable provision of public toilet facilities for females and males.

It is also contrary to the intent of the different Table values found in the Plumbing Code and the Building Code as stated in the commentary, which is to provide *"an 'equality of fixture availability' in those particular occupancies"* with *"historically […] long lines of females waiting to use toilet facilities while male facilities had no lines."*

We do not believe this disparity in the two provisions was intentional, rather an oversight and lack of consideration of the implications that provisions in one code could have on the provisions of another code.

Bibliography: Potty Parity Act introduced in Congress; codes continue to address issue. Roulo, Candace. May 03, 2010. Contractor Magazine. https://www.contractormag.com/home/article/20875882/potty-parity-act-introduced-in-congress-codes-continue-to-address-issue
The Long Lines for Women's Bathrooms Could Be Eliminated. Why Haven't They Been? Pinsker, Joe. January 23, 2019. The Atlantic Magazine. https://www.theatlantic.com/family/archive/2019/01/women-men-bathroom-lines-wait/580993/

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal does not eliminate any existing code provisions, nor does it create new provisions. Instead, provides consistency across related code sections.

Public Hearing Results

Page: 1

Mod_10939_Text_P52-21.pdf

P10939Text Modification

Committee Action **As Submitted**

Committee Reason: There is a need to know how to do substitution of water closets with urinals where the toilet facility serves all persons regardless of sex. (12-2)

Final Hearing Results

P52-21 AS

Page: 2

Mod_10939_Text_P52-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

36

P10996		/G44-21 Part III			
Date Submitted	03/13/2024	**Section**	403.1	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Table 403.1. This change corrects discrepancies inadvertently created by past code changes. This change resolves that by adding "or more than two dwelling units" to the description of R-1.

Rationale

See attached

P10996Text Modification

See attached

Page: 1

Mod10996_TextOfModification.pdf

P10996Text Modification

G44-21 Part III

Original Proposal

PART III - IPC: TABLE 403.1, 606.2;

Proponents: Daniel Willham, Fairfax County, Fairfax County (daniel.willham@fairfaxcounty.gov)

2021 International Plumbing Code

Revise as follows:

TABLE 403.1 MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a] (See Sections 403.1.1 and 403.2)

Portions of table not shown remain unchanged.

NO.	CLASSIFICATION	DESCRIPTION	WATER CLOSETS (URINALS: SEE SECTION 424.2)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAIN (SEE SECTION 410)	OTHER
			MALE	FEMALE	MALE	FEMALE			
7	Residential	Hotels, motels, boarding houses (transient)	1 per *dwelling* or sleeping unit		1 per *dwelling* or sleeping unit		1 per *dwelling* or sleeping unit	–	1 service sink
		Dormitories, fraternities, sororities and boarding houses (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		Apartment house	1 per dwelling *or sleeping* unit		1 per dwelling or *sleeping* unit		1 per dwelling or *sleeping* unit	–	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		One- and two-family dwellings and lodging houses with five or fewer guestrooms	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	–	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per dwelling unit
		Congregate living facilities with 16 or fewer persons	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the *International Building Code*.

b. Toilet facilities for employees shall be separate from facilities for inmates or care recipients.

c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient sleeping units shall be permitted provided that each patient sleeping unit has direct access to the toilet room and provision for privacy for the toilet room user is provided.

d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

e. For business and mercantile classifications with an occupant load of 15 or fewer, service sinks shall not be required.

f. The required number and type of plumbing fixtures for outdoor public swimming pools shall be in accordance with Section 609 of the International Swimming Pool and Spa Code.

606.2 Location of shutoff valves. Shutoff valves shall be installed in the following locations:

1. On the fixture supply to each plumbing fixture other than bathtubs and showers in one- and two-family residential *occupancies*, and other than in individual dwelling or sleeping units that are provided with unit shutoff valves in hotels, motels, boarding houses and similar *occupancies*.
2. On the water supply pipe to each sillcock.
3. On the water supply pipe to each appliance or mechanical equipment.

Reason: This change corrects discrepancies inadvertently created by past code changes. The description for R-1 occupancies used to

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P10996Text Modification

only read "R-1 Residential occupancies where the occupants are primarily transient in nature ..." It did not mention sleeping units. The definition for *sleeping units* was added to the code to coordinate with the Fair Housing Act Guidelines (see code change E70-00) and did not involve the descriptions for residential occupancies in Chapter 3. Sleeping units was added to the descriptions of R-1 (2006 IBC) and R-2 (2003 IBC), in changes that do not appear in any code change proposal; these changes are also not marked as changes by bars in the margins. They appear to possibly have been made by the code correlation committee. However, no correction was made to the description of R-1, which, like R-2 occupancies, can also include both dwelling and sleeping units. This has left an apparent gap in the code for transient residential occupancies with dwelling units. This change resolves that by adding "or more than two dwelling units" to the description of R-1. Similar to the wording for the description for R-2, "or more than two dwelling units" avoids including R-3 residential occupancies and one- and two-family dwellings regulated under the IRC. This change also coordinates the references to sleeping units throughout the codes for R-1 occupancies to also include dwelling units. While doing this, a couple of instances of dwelling units for R-2 (without the mention of sleeping units) were found and also corrected to include sleeping units to coordinate with the description of R-2 occupancies.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification and coordination of the code which will not affect construction cost.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

G44-21 Part III AS

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Mod_10996_Text_G44-21 Part III.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P11640		/P25-21			
Date Submitted	05/14/2024	**Section**	403.1.1	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Clarifies language for Single-user toilet and bathing room fixtures

Rationale

See attached

P11640Text Modification

See attached

Page: 1

Mod11640_TextOfModification.pdf

P11640Text Modification

P25-21

Original Proposal

IPC: 403.1.1, 403.1.2

Proponents: Emma Gonzalez-Laders, NYS DOS Division of Building Standards and Codes, NYS DOS Division of Building Standards and Codes (emma.gonzalez-laders@dos.ny.gov); China Clarke, New York State Dept of State, New York State Dept of State (china.clarke@dos.ny.gov); David Collins, The Preview Group, Inc, The American Institute of Architects (dcollins@preview-group.com)

2021 International Plumbing Code

Revise as follows:

403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table 403.1. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple *occupancies*, such fractional numbers for each *occupancy* shall first be summed and then rounded up to the next whole number.

Exceptions:

1. The total occupant load shall not be required to be divided in half where *approved* statistical data indicate a distribution of the sexes of other than 50 percent of each sex.
2. Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple-user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall.
3. ~~Distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 403.1.2.~~

403.1.2 Single-user toilet and bathing room fixtures. The plumbing fixtures located in single-user toilet and bathing rooms, including family or assisted-use toilet and bathing rooms ~~that are required by Section 1110.2.1 of the International Building Code~~, shall contribute toward the total number of required plumbing fixtures for a building or tenant space, and shall be deducted proportionately from the required gender ratios of Table 403.1. Single-user toilet and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified as being available for use by all persons regardless of ~~their~~ sex. The total number of fixtures shall be permitted to be based on the required number of separate facilities or based on the aggregate of any combination of single-user or ~~separate~~multi-user facilities.

Reason: Exception 3 to Section 2902.1.1 of the 2021 IBC was added during the last code cycle and it indicates that *"distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 2902.1.2."* Section 403.1.1 of the 2021 IPC is nearly identical. The section referenced (2902.1.1) pertains to single-user facilities and how their number contributes to the total required fixture counts. Neither Section, however, provides any guidance on how the required gender rations are to be maintained in accordance with Table 2902.1. This ambiguity may lead some code users to assume that the lower ratios can be used, while other code users would assume that the more restrictive requirement should apply (in accordance with Section 102.1). In either scenario, the resulting number of fixtures would be either too low and not serve the needs of facility users or too high and not serve the needs of developers by unreasonably increasing cost.

Also, this exception may suggest that proportionality in the distribution of toilet fixtures by gender is not required. This is contrary to the intent of the proponents, based on conversations with one of them, and also contrary to the intent of the different Table values found in the Plumbing Code and the Building Code as stated in the commentary, which is to provide *"an 'equality of fixture availability' in those particular occupancies"* with *"historically […] long lines of females waiting to use toilet facilities while male facilities had no lines."*

A better way to address the issue of proportionate distribution and how single-user facilities are to be deducted from the total required number of fixtures is to explicitly say so in Section 2902.1.2, and we, therefore, propose that the language *"and shall be deducted proportionately from the required gender ratios of Table 2902.1"* be added to that section.

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Additionally, the reference in Section 2902.1.2 of the IBC and Section 403.1.2 of the IPC to *"family or assisted-use toilet and bathing rooms that are required by Section 1110.2.1"* is unnecessary and may incorrectly suggest that ONLY those facilities required by Section 1110.2.1 of the IBC can be counted and *"contribute toward the total number of required plumbing fixtures,"* where we believe that the intent is to have ALL single-user fixtures contribute to those totals, regardless of being required or provided voluntarily, therefore, we propose that the reference to Section 1110.2.1 be deleted.

And, to say "single-user and separated facilities" may incorrectly suggest that single-user facilities could be separated by gender, contrary to the 2nd sentence in the Section. We believe the intent to be for ALL facilities, single- or multi-user, separated or not, to contribute to the total fixture count. Therefore, we propose that the word *"separated"* in the last sentence of the code provision be replaced with the word *"multi-user."*

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal does not eliminate any existing code provisions, nor does it create new provisions. Instead, it provides consistency across related code sections.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

403.1.2 Single-user toilet and bathing room fixtures. The plumbing fixtures located in single-user toilet<u>or single-user</u> ~~and~~ bathing rooms, including family or assisted-use toilet and bathing rooms, shall contribute toward the total number of required plumbing fixtures for a building or tenant space~~, and.~~ <u>The number of fixtures in single-user toilets, single-user bathing fixtures and family or assisted-use toilets</u>shall be deducted proportionately from the required gender ratios of Table 403.1. Single-user toilet and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified as being available for use by all persons regardless of sex.
The total number of fixtures shall ~~be permitted to~~ be based on the required number of separate facilities or based on the aggregate of any combination of single-user or <u>male and female designated</u> ~~multi-user~~ facilities.

Committee Reason: For the modification: The clarifies the section to make sure that requirement covers all facilities. (14-0)
For the proposal As Modified: Exception No. 3 was always out of place. There has always been a problem with how to count the fixtures. This clears up the confusion. (14-0)

Public Comments

Public Comment 1

Proponents: Emma Gonzalez-Laders, NYS DOS Division of Building Standards and Codes, NYS DOS Division of Building Standards and Codes (emma.gonzalez-laders@dos.ny.gov); David Collins, The Preview Group, Inc, The American Institute of Architects (dcollins@preview-group.com); China Clarke, New York State Dept of State, New York State Dept of State (china.clarke@dos.ny.gov) requests As Modified by Public Comment

Further modify as follows:

2021 International Plumbing Code

403.1.2 Single-user toilet and bathing room fixtures . The plumbing fixtures located in single-user toilet or single-user bathing rooms, including family or assisted-use toilet and bathing rooms, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. The number of fixtures in single-user toilets, single-user bathing fixtures and family or assisted-use toilets shall be deducted proportionately from the required gender ratios of Table 403.1. Single-user toilet and bathing rooms, and family or assisted-use

P11640Text Modification

toilet rooms and bathing rooms shall be identified as being available for use by all persons regardless of sex.
The total number of fixtures shall be based on the required number of separate facilities or based on the aggregate of any combination of single-user or ~~male and female designated~~multiple-user facilities.

Commenter's Reason: A seemingly simple word change had an unintended misapplication. The intent of the last sentence is to indicate that all plumbing fixtures available for public use count regardless of whether provided in single- or multi-user facilities and regardless of whether those multi-user facilities are separated by gender or not. As currently written, the wording "male and female designated facilities" would suggest that the fixtures located in multi-user facilities designed to serve all persons regardless of sex should not be counted, which is incorrect and was not the intent of the proponent.
A simple fix to substitute the words "male and female designated" with "multi-user" resolves that unintended misaplication.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction
This proposal is editorial and a matter of clarification. It has no cost implication.

Final Hearing Results

P25-21 AMPC1

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Mod_11640_Text_P25-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P11674		/P32-21			
Date Submitted	05/14/2024	**Section**	403.2.1	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Removes redundant language for clearer interpretation

Rationale

See attached

P11674Text Modification

See attached

Page: 1

Mod11674_TextOfModification.pdf

P11674Text Modification

P32-21

Original Proposal

IPC: 403.2.1

Proponents: Pennie Feehan, Chair of PMGCAC, Chair of PMGCAC (PMGCAC@iccsafe.org)

2021 International Plumbing Code

Delete without substitution:

~~**403.2.1 Family or assisted-use toilet facilities serving as separate facilities.** Where a building or tenant space requires a separate toilet facility for each sex and each toilet facility is required to have only one water closet, two family or assisted-use toilet facilities shall be permitted to serve as the required separate facilities. Family or assisted-use toilet facilities shall not be required to be identified for exclusive use by either sex as required by Section 403.4.~~

Reason: Section 403.2.1 was added in the 2012 IPC to allow small occupancies (needing only 1 WC for males and 1 WC for females) to have these separate sex, single-user toilet facilities labeled for use by both sexes. The purpose was to reduce wait times if one of the facilities was being used for more than an "average" length of time. This was a small step towards what has been called in the past, "unisex" labeling of a single-user toilet facility.

Another section in the IPC (403.1.2) has "morphed" through the 2015 and 2018 editions to result in the 2021 edition requiring that all single-user toilet facilities be labeled "for use by all persons regardless of their sex." Therefore, Section 403.2.1 is redundant and needs to be deleted to eliminate confusion.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC

has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 25.

Cost Impact: The code change proposal will decrease the cost of construction
Because the two single-user toilet facilities are required to be identical, where they are in a cluster, only one of the facilities is required to be of accessible design (in accordance with the building code's accessibility exception.) The one toilet facility will be smaller and without accessible fixtures and hardware (grab bars). Therefore, the cost for the one toilet facility will be less.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P32-21 AS

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Mod_11674_Text_P32-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

39

P11675 **/P36-21**

Date Submitted	05/14/2024	**Section**	403.4	**Proponent**	Mo Madani
Chapter	4	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

This proposal seeks to bring IPC Section 403.4 (IBC Section 2902.4) into alignment with the changes made to IPC Sections 403.1.1 and 403.1.2

Rationale

See attached

P11675Text Modification

See attached

Page: 1

Mod11675_TextOfModification.pdf

P11675Text Modification

P36-21

Original Proposal

IPC: 403.4

Proponents: Emma Gonzalez-Laders, NYS DOS Division of Building Standards and Codes, NYS DOS Division of Building Standards and Codes (emma.gonzalez-laders@dos.ny.gov); China Clarke, New York State Dept of State, New York State Dept of State (china.clarke@dos.ny.gov); Rebecca Krefting, Skidmore College, Self (rkreftin@skidmore.edu)

2021 International Plumbing Code

Revise as follows:

403.4 Signage. Required *public* facilities shall be provided with signs that ~~designate the~~indicate whether the facility is to be used by males, by females, or by all persons regardless of sex~~, as required by Section 403.2~~. Signs shall be readily visible and located near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with Section 1111 of the International Building Code.

Reason: This proposal seeks to bring IPC Section 403.4 (IBC Section 2902.4) into alignment with the changes made to IPC Sections 403.1.1 and 403.1.2 (IBC Sections 2902.1.1 and 2902.1.2) of the 2021 IPC (IBC) in the last code cycle.
Provisions for the design of multi-user facilities designed to serve all persons regardless of their sex were introduced during the last code cycle. IPC Section 403.1.1 (IBC 2902.1.1) of the 2021 IPC (IBC) includes an exception applicable to the fixture count calculations for such facilities. Also, IPC Section 403.1.2 (IBC 2902.1.2) of the 2021 IPC (IBC) indicates that *"single-user facilities … shall be identified as being available for use by all persons regardless of their sex."* However, Section IPC 403.4 (IBC 2902.4) was not changed accordingly and, as it stands, it contradicts the previously quoted section. Additionally, the purpose of this section is to require signage, it is not to determine how facilities are separated or not, therefore, the reference to Section IPC 403.2 (IBC 2902.2) is unnecessary and can only add confusion.

Bibliography: Section 2902.2 of the 2021 IBC was referenced in the Reason Statement. It is copied here for convenience.
[P] 2902.2 Separate facilities.

Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for *dwelling units* and *sleeping units*.
2. Separate facilities shall not be required in structures or tenant spaces with a total *occupant load*, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum *occupant load* is 100 or fewer.
4. Separate facilities shall not be required in business occupancies in which the maximum *occupant load* is 25 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilets rooms are provided in accordance with Section 2902.1.2.
6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets are installed in accordance with Section 405.3.4 of the *International Plumbing Code*. Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal does not eliminate any existing code provisions, nor does it create new provisions. Instead, it provides consistency across related code sections.

Public Hearing Results

Committee Action **As Submitted**

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P11675Text Modification

Committee Reason: This is a simple editorial fix. There is no new requirement. (14-0)

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P36-21	AS

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

40

P10941		/P54-21			
Date Submitted	03/08/2024	**Section**	501.9	**Proponent**	Mo Madani
Chapter	5	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Sets requirement of lead content in water heaters

Rationale

See attached

P10941Text Modification

See attached

Page: 1

Mod10941_TextOfModification.pdf

P10941Text Modification

P54-21 Part I

Original Proposal

IPC: 501.9 (New)

Proponents: Jeremy Brown, NSF International, NSF International (brown@nsf.org)

2021 International Plumbing Code

Add new text as follows:

501.9 Lead Content. Water heaters shall comply with NSF 372 and shall have a weighted average lead content of 0.25% or less.

Reason: Section 605.2.1 was created to implement lead content requirements of the US Safe Drinking Water Act (SDWA). In September 2020, the EPA finalized its final rule for interpreting the Safe Drinking Water Act. The final rule did change scope of products affected by the lead content requirements and cited water heaters as fixtures used for potable water according the final rule. See SDWA definition below: "Fixture means a receptacle or device that is connected to a water supply system or discharges to a drainage system or both. Fixtures used for potable uses shall include but are not limited to: (1) Drinking water coolers, drinking water fountains, drinking water bottle fillers, dishwashers; (2) Plumbed in devices, such as point-of-use treatment devices, coffee makers, and refrigerator ice and water dispensers; and (3) Water heaters, water meters, water pumps, and water tanks, unless such fixtures are not used for potable uses." Final rule is found at https://www.federalregister.gov/documents/2020/09/01/2020-16869/use-of-lead-free-pipes-fittings-fixturessolder-and-flux-for-drinking-water Water heaters are singled out for proposed code sections because they are not consistently interpreted as intended to convey or dispense drinking water. As such they need a specific code section to require lead content to be consistent with the SDWA. I have submitted this code change as well as a similar one to give the committee options for how this could be approved.

Bibliography: NSF/ANSI/CAN 372-2020 Drinking Water System Components-Lead Content

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The SDWA already mandates that water heaters be third party certified and lead free so this proposal does not increase the cost of construction.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
501.9 Lead Content. Water heaters that arepart of the potable water distribution systemshall comply with NSF 372 and shall have a weighted average lead content of 0.25% or less.

Committee Reason: For the modification: Clarification is needed to allow for water heaters that are not used for potable water distribution. (10-4)
For the proposal As Modified: This aligns the code with the USEPA final rule on reduced lead (0.25%) for components that contact drinking water. A water heater is considered to supply drinking water. (12-2)

Final Hearing Results

P54-21 Part I AM

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Mod_10941_Text_P54-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P10947	/P55-21

Date Submitted	03/08/2024	**Section**	504.7	**Proponent**	Mo Madani
Chapter	5	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds more requirements for water heater pans to section

Rationale

See attached

1st Comment Period History

P10947-G1

Proponent Gary Kozan Submitted 6/3/2024 11:52:44 AM Attachments Yes

Comment:

I do not agree with the last sentence of this proposal, referencing Section 314.2.3.2, and including it in the water heater chapter would result in a wide range of interpretations in the field. This provision already exists in the Condensate Disposal Section of the Plumbing Code (314.2.3.2), the Condensate Disposal Section of the Mechanical Code (307.2.3.2) and the Condensate Disposal Section of the Residential Code (M1411.3.1.2). According to the IPC Commentary, its stated purpose is to provide protection for mechanical equipment subject to intermittent condensate overflow conditions. This provision was never intended to apply to water heaters. I have not found any water heater manufacturer installation instructions which require heaters located within drain pans to be elevated above the flood level rim of the pan. Exposing the bottom of a water heater to wet conditions does not damage the product or hinder its performance. In fact, the most likely cause of water in a pan is a leaking tank that needs to be replaced anyway. I urge the TAC to disapprove this mod, along with its companion change #11627 in the Residential Code. Note: The part of this proposal regarding plastic pans under gas-fired water heaters does have merit, and I would gladly reintroduce this portion for approval during the next part of the code development process.

P10947Text Modification

See attached

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Mod10947_TextOfModification.pdf

P10947Text Modification

P55-21

Original Proposal

IPC: 504.7, ASTM Chapter 15 (New), UL Chapter 15 (New)

Proponents: Guy McMann, Jefferson County Govt., Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2021 International Plumbing Code

Revise as follows:

504.7 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.
2. Plastic not less than 0.036 inch (0.9 mm) in thickness.
3. Other *approved* materials.
4. A plastic pan installed beneath a gas fired water heater shall be constructed of material having a flame spread index of 25 or less and a smoked developed index of 450 or less when tested in accordance with ASTM E84 or UL 723.
5. Water heaters installed in pans shall comply with Section 314.2.3.2

~~A plastic pan shall not be installed beneath a gas-fired water heater.~~4

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

E84-2018B Standard Test Methods for Surface Burning Characteristics of Building Materials

UL

UL LLC
333 Pfingsten Road
Northbrook, IL 60062-2096

723-2018 Test for Surface Burning Characteristics of Building Materials

Reason: This language was installed during the 2018 cycle and will make the IPC consistent with what's in the IRC Section 2801.6 as there are now listed pans for this application.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This language is editorial in nature and will not affect cost.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

504.7 Required pan. Where a storage tank-type water heater or a hot water storage tank is installed in a location where water leakage from the tank will cause damage, the tank shall be installed in a pan constructed of one of the following:

1. Galvanized steel or aluminum of not less than 0.0236 inch (0.6010 mm) in thickness.

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P10947Text Modification

2. Plastic not less than 0.036 inch (0.9 mm) in thickness.
3. Other *approved* materials.
4. ~~A plastic pan installed beneath a gas fired water heater shall be constructed of material having a flame spread index of 25 or less and a smoked developed index of 450 or less when tested in accordance with ASTM E84 or UL 723.~~
5. ~~Water heaters installed in pans shall comply with Section 314.2.3.2~~

A plastic pan installed beneath a gas-fired water heater shall be constructed of material having a flame spread index of 25 or less and a smoke developed index of 450 or less when tested in accordance with ASTM E84 or UL 723.

Water heaters installed in pans shall comply with Section 314.2.3.2.

Committee Reason: For the modification: The correction is to place Item 4 and Item 5 in the main paragraph where they make more sense. (12-2)
For the proposal As Modified: The Committee agreed with the the published reason statement. (11-3)

Final Hearing Results

P55-21 AM

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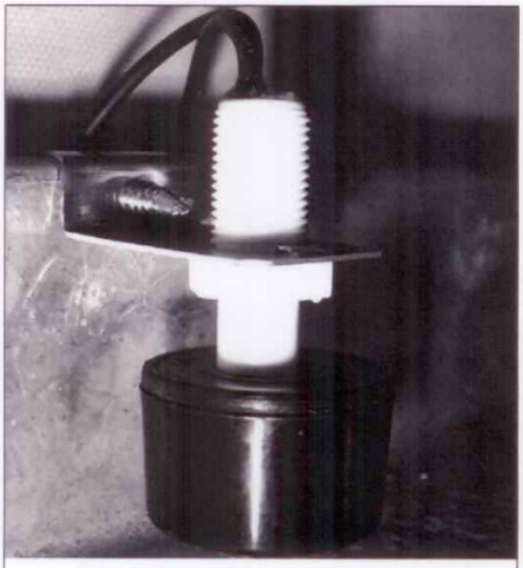
The exception is for fuel-fired appliances having integral controls to prevent operation of the appliance if condensate is not draining. The standards for some appliances, such as gas-fired furnaces, will permit either of two performance modes for an appliance with a failed condensate drainage system: 1) the appliance will shut down or 2) the appliance will continue to operate, provided that such operation does not in any way present a hazard.



Commentary Figure 314.2.3(3)
PRIMARY OR AUXILIARY DRAIN PAN FLOAT SWITCH
(Photo courtesy of SMD Research, Inc.)

[M] 314.2.3.1 Water-level monitoring devices. On downflow units and all other coils that do not have a secondary drain or provisions to install a secondary or auxiliary drain pan, a water-level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices installed in the drain line shall not be permitted.

❖ Some appliances (downflow type) and coil arrangements cannot be fitted with a secondary drain or installed with an auxiliary drain pan. This is particularly true for the typical rooftop HVAC unit where drain pan overflow could damage ducts and duct insulation. An internal water monitoring device must be used in these situations so that the device shuts off the unit prior to overflow of the primary drain pan. If the device was installed external to the appliance, a drain blockage in or near the appliance might occur upstream of the device, thereby rendering it useless.

[M] 314.2.3.2 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill such portions of the appliances, equipment and insulation shall be installed above the *flood level rim* of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and *approved*.

❖ If a condensate overflow situation occurs, appliances sitting directly on the bottom of the pan will be exposed to the condensate water, even though the pan may have a working drain. Most appliances are not suitable for constantly damp or intermittent wet environments. Sheet metal enclosures will quickly rust under these conditions. Exterior and interior insulation will be degraded by the water, providing ideal conditions for mold growth in concealed locations. This section requires that any such appliance be elevated above the flood rim level of the pan below so that the appliance is not directly exposed to wet conditions. The code is silent on what type of material is to be used for support other than requiring it to be water resistant and approved by the code official (see Commentary Figure 314.2.3.2).

Commentary Figure 314.2.3.2
FURNACE ELEVATED ABOVE TOP OF CONDENSATE PAN

[M] 314.2.4 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

❖ The appliance or equipment manufacturer determines the need for a trap and often specifies its depth and configuration. The traps addressed in this section are unrelated to plumbing traps and serve a different purpose. Condensate drain traps do not directly connect in any way to the plumbing DWV system of a building. Condensate drain traps are installed to prevent air from being pushed or pulled through the drain piping. Such airflow can impede condensate flow, causing overflow or abnormal water depth in drain pans. Some

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

42

P11679		/P54-21 Part I			
Date Submitted	05/15/2024	**Section**	501.9	**Proponent**	Mo Madani
Chapter	5	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds language for lead free requirements for water heaters

Rationale

See attached

P11679Text Modification

See attached

Page: 1

Mod11679_TextOfModification.pdf

P11679Text Modification

P54-21 Part I

Original Proposal

IPC: 501.9 (New)

Proponents: Jeremy Brown, NSF International, NSF International (brown@nsf.org)

2021 International Plumbing Code

Add new text as follows:

501.9 Lead Content. Water heaters shall comply with NSF 372 and shall have a weighted average lead content of 0.25% or less.

Reason: Section 605.2.1 was created to implement lead content requirements of the US Safe Drinking Water Act (SDWA). In September 2020, the EPA finalized its final rule for interpreting the Safe Drinking Water Act. The final rule did change scope of products affected by the lead content requirements and cited water heaters as fixtures used for potable water according the final rule. See SDWA definition below: "Fixture means a receptacle or device that is connected to a water supply system or discharges to a drainage system or both. Fixtures used for potable uses shall include but are not limited to: (1) Drinking water coolers, drinking water fountains, drinking water bottle fillers, dishwashers; (2) Plumbed in devices, such as point-of-use treatment devices, coffee makers, and refrigerator ice and water dispensers; and (3) Water heaters, water meters, water pumps, and water tanks, unless such fixtures are not used for potable uses." Final rule is found at https://www.federalregister.gov/documents/2020/09/01/2020-16869/use-of-lead-free-pipes-fittings-fixturessolder-and-flux-for-drinking-water Water heaters are singled out for proposed code sections because they are not consistently interpreted as intended to convey or dispense drinking water. As such they need a specific code section to require lead content to be consistent with the SDWA. I have submitted this code change as well as a similar one to give the committee options for how this could be approved.

Bibliography: NSF/ANSI/CAN 372-2020 Drinking Water System Components-Lead Content

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The SDWA already mandates that water heaters be third party certified and lead free so this proposal does not increase the cost of construction.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
501.9 Lead Content. Water heaters that arepart of the potable water distribution systemshall comply with NSF 372 and shall have a weighted average lead content of 0.25% or less.

Committee Reason: For the modification: Clarification is needed to allow for water heaters that are not used for potable water distribution. (10-4)
For the proposal As Modified: This aligns the code with the USEPA final rule on reduced lead (0.25%) for components that contact drinking water. A water heater is considered to supply drinking water. (12-2)

Final Hearing Results

P54-21 Part I AM

Page: 1

Mod_11679_Text_P54-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

43

P10831		/G3-21 Part III			
Date Submitted	03/07/2024	**Section**	609.1	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds language for Ambulatory Care Facility

Rationale

See attached

P10831Text Modification

See attached

Page: 1

Mod10831_TextOfModification.pdf

P10831Text Modification

G3-21 Part III

Original Proposal

PART III - IPC: SECTION 202(New), 609.1

Proponents: John Williams, Chair, Healthcare Committee (ahc@iccsafe.org)

2021 International Plumbing Code

Add new definition as follows:

[BG] AMBULATORY CARE FACILITY

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Buildings or portions thereof used to provide medical, surgical, psychiatric, nursing or similar care on a less than 24-hour basis to persons who are rendered incapable of self-preservation by the services provided or staff has accepted responsibility for care recipients already incapable.

Revise as follows:

609.1 Scope. This section shall govern those aspects of health care plumbing systems that differ from plumbing systems in other structures. Health care plumbing systems shall conform to the requirements of this section in addition to the other requirements of this code. The provisions of this section shall apply to the special devices and equipment installed and maintained in the following *occupancies*: Group I-1, Group I- 2, ~~Group B~~ ambulatory care facilities, medical offices, research and testing laboratories, and Group F facilities manufacturing pharmaceutical drugs and medicines.

Reason: The term “ambulatory care facility” is currently defined in the IBC and IFC. It should be defined in the other codes where the term is used. When this item was first introduced to the codes, it was believed that it was needed to add ‘Group B’ in front of the term. This proposal removes it as no longer necessary, and will make this consistent with the numerous other locations throughout the codes where ‘Group B’ in not included. The intent is to not appear to have two different types of ‘ambulatory care facilities’.
There will also be a Group B proposal to IEBC to add the definition and correct the terms in 302.2.1, 503.15 and 805.11.

The CHC was established by the ICC Board to evaluate and assess contemporary code issues relating to healthcare facilities. This is a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. In 2020 the CHC held several virtual meeting, which included members of the committees as well as any interested parties, to discuss and debate the proposed changes. Information on the CHC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CHC effort can be downloaded from the CHC website at CHC.

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Cost Impact: The code change proposal will not increase or decrease the cost of construction
This an editorial clarification for consistent terminology

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The proposal provides for consistency with the building code. (13-1)

Page: 1

Mod_10831_Text_G3-21 Part III.pdf

P10831Text Modification

Final Hearing Results

G3-21 Part III AS

Mod_10831_Text_G3-21 Part III.pdf Page: 2

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

44

P10949		/P61-21 Part I			
Date Submitted	03/08/2024	**Section**	605.3	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new requirements to Table 605.3 for A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing

Rationale

See attached

P10949Text Modification

See attached

Page: 1

Mod10949_TextOfModification.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

45

P10951		/P62-21 Part I			
Date Submitted	03/08/2024	**Section**	605.4	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds requirements for Standard Specification for Welded Stainless Steel Mechanical Tubing

Rationale

See attached

P10951Text Modification

See attached

Page: 1

Mod10951_TextOfModification.pdf

P62-21 Part I

Original Proposal

IPC: TABLE 605.4, ASTM Chapter 15 (New)

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 605.4 WATER DISTRIBUTION PIPE

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic pipe and tubing	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75; ASTM B88; ASTM B251; ASTM B447
Cross-linked polyethylene (PEX) plastic tubing	ASTM F876; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Ductile iron pipe	AWWA C115/A21.15; AWWA C151/A21.51
Galvanized steel pipe	ASTM A53
Polyethylene/aluminum/polyethylene (PE-AL-PE) composite pipe	ASTM F1282
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Stainless steel pipe (Type 304/304L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel pipe (Type 316/316L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel tubing (Type 304/304L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel tubing (Type 316/316L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing

Reason: Adding Stainless Steel tubing to account for both pipe and tubing materials. ASTM A229 and ASTM A554 is equivalent to other standards ASTM A312; ASTM A778 already included in this table and should be added to increase the options for materials to be used in water service pipe installations.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Adding an additional standard option for stainless steel pipe to be listed to will not increase or decrease the cost of construction. If anything, it has potential to decrease the cost since this increases the number of suppliers of pipe that can be purchased.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The addition will provide more options available to the designer. (13-0)

P10951Text Modification

Public Comments

Public Comment 1

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

TABLE 605.4 WATER DISTRIBUTION PIPE

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic pipe and tubing	ASTM D2846; ASTM F441; ASTM F442; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC)	ASTM F2855
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75; ASTM B88; ASTM B251; ASTM B447
Cross-linked polyethylene (PEX) plastic tubing	ASTM F876; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Ductile iron pipe	AWWA C115/A21.15; AWWA C151/A21.51
Galvanized steel pipe	ASTM A53
Polyethylene/aluminum/polyethylene (PE-AL-PE) composite pipe	ASTM F1282
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Stainless steel pipe (Type 304/304L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel pipe (Type 316/316L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel tubing (Type 304/304L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel tubing (Type 316/316L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778

Commenter's Reason: Based on IPC Committee feedback and additional comments on other proposals, I suggest removing ASTM A554 from this proposal as it is deemed as a mechanical/structural tubing standard. With this modification, there will be consistency across similar tables in the IMC and IRC as well as other tables that were Accepted as Modified by the IPC Committee.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction Removal of this standard will have no impact on the cost of construction.

Final Hearing Results

P62-21 Part I AMPC1

Page: 2

Mod_10951_Text_P62-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

46

P10966		/P63-21 Part I			
Date Submitted	03/08/2024	**Section**	605.5	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Updates reference standard A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing

Rationale

See atached

P10966Text Modification

See attached

Page: 1

Mod10966_TextOfModification.pdf

P63-21 Part I

Original Proposal

IPC: TABLE 605.5, ASTM Chapter 15 (New)

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 605.5 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F1476; ASTM F1548; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; CSA B137.5
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; CSA B137.18
Gray iron and ductile iron	ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;
Insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Malleable iron	ASME B16.3
Metal (brass) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974
Polyethylene (PE) plastic pipe	ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Stainless steel (Type 316/316L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548; ASTM F3226

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing

Reason: ASTM A269 and A554 are standards for Stainless tubing equivalent with existing ASTM A312 and A778 standards and should be included to allow for additional material standards. ASTM F3226 *Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems* is equivalent to other standards already listed for this material, is included for other materials in this table, and should be added to Steel to increase the options for materials to be used in water supply fitting installations.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Adding an additional standard option for steel pipe fittings to be listed to will not increase or decrease the cost of construction. If anything, it has potential to decrease the cost since this increases the number of suppliers of fittings that can be purchased.

Public Hearing Results

Committee Action **Disapproved**

Committee Reason: The proposed standard ASTM A554 is for "ornamental and structural and exhaust applications". This is inappropriate for plumbing piping. (11-2)

Public Comments

Public Comment 1

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

TABLE 605.5 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F1476; ASTM F1548; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; CSA B137.5
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; CSA B137.18
Gray iron and ductile iron	ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;
Insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Malleable iron	ASME B16.3
Metal (brass) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974
Polyethylene (PE) plastic pipe	ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Stainless steel (Type 316/316L)	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548; ASTM F3226

Commenter's Reason: This public comment addresses the committee's concerns with the suitability of ASTM A554 as a standard for this code and the reason for disapproval was the addition of ASTM A554. Based on Committee feedback and additional comments, this public comment removes ASTM A554 from this proposal as it is deemed as a mechanical/structural tubing standard. With this modification, there will be consistency across similar tables in the IMC and IRC. P61 Part 1 and P62 Part 1 included the addition of ASTM A269 and were approved by the committee. ASTM F3226 is already included as a standard for Copper and Stainless materials in this table and should be included for Steel as well as the material is covered in the scope of this standard and is performance tested as other alloys in the standard.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction Removal of this standard will have no impact on the cost of construction.

Final Hearing Results

P63-21 Part I AMPC1

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

47

P10972		/P64-21 Part I			
Date Submitted	03/11/2024	**Section**	605.5	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds updated ASTM F3347-20 reference standard requirements

Rationale

See attached

P10972Text Modification

See attached

Page: 1

Mod10972_TextOfModification.pdf

P64-21 Part I

Original Proposal

IPC: TABLE 605.5, ASTM Chapter 15 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 605.5 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F1476; ASTM F1548; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.18
Gray iron and ductile iron	ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;
Insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Malleable iron	ASME B16.3
Metal (brass) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974
Polyethylene (PE) plastic pipe	ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Stainless steel (Type 316/316L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F3347-20A — Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Reason: ASTM F3347 is titled, "Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing and contains information for metallic fittings for both PEX and PERT systems intended for use in residential and commercial, hot and cold, potable water distribution systems as well as sealed central heating, including under-floor heating/cooling systems, and residential fire sprinkler systems.

Bibliography: ASTM F3347, Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal adds a new standard for PEX and PERT fittings and is not expected to raise or lower the cost of construction.

P10972Text Modification

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (13-0)

Final Hearing Results

P64-21 Part I AS

Page: 2

Mod_10972_Text_P64-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

48

P10974		/P65-21 Part I			
Date Submitted	03/11/2024	**Section**	605.5	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Updates referenced standard ASTM F3348-20b

Rationale

See attached

P10974Text Modification

See attached

Page: 1

Mod10974_TextOfModification.pdf

P65-21 Part I

Original Proposal

IPC: TABLE 605.5, ASTM Chapter 15 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 605.5 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F1476; ASTM F1548; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348; CSA B137.5
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D3261; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3348; CSA B137.18
Gray iron and ductile iron	ASTM F1476; ASTM F1548; AWWA C110/A21.10; AWWA C153/A21.53;
Insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Malleable iron	ASME B16.3
Metal (brass) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974
Polyethylene (PE) plastic pipe	ASTM D2609; ASTM D2683; ASTM D3261; ASTM F1055; CSA B137.1
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Stainless steel (Type 316/316L)	ASTM A312; ASTM A778; ASTM F1476; ASTM F1548; ASTM F3226
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F1476; ASTM F1548

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F3348-20b — Standard Specification for Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Reason: ASTM F3348 is titled, "Standard Specification for Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing" and contains information on plastic fittings for PEX and PERT systems and should be included in the fittings table. The fittings are intended for use in residential and commercial, hot and cold, potable water distribution systems as well as sealed central heating, including under-floor heating/cooling systems, and residential fire sprinkler systems.

Bibliography: ASTM F3348, Standard Specification for Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

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

P10974 Text Modification

This proposal adds a standard for fittings and is not expected to raise or lower the costs of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This is needed to cover press connect fittings that are available. (13-0)

Final Hearing Results

P65-21 Part I AS

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

49

P10976		/P67-21			
Date Submitted	03/11/2024	**Section**	605.5	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Change language to copper alloy for brass and bronze

Rationale

See attached

P10976Text Modification

See attached

Page: 1

Mod10976_TextOfModification.pdf

P10976Text Modification

P67-21

Original Proposal

IPC: TABLE 605.5

Proponents: Pennie L Feehan, Pennie L Feehan Consulting, Copper Development Association (penniefeehan@me.com)

2021 International Plumbing Code

Revise as follows:

TABLE 605.5 PIPE FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Metal (brass copper alloy) insert fittings for polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1974

Reason: Brass and Bronze are Copper Alloys. Copper Alloy is the correct term.

Cost Impact: The code change proposal will increase the cost of construction
This code change proposal will not increase the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This proposal is consistent with changes in terminology that were approved in the past few code cycles. (14-0)

Final Hearing Results

P67-21 AS

Page: 1

Mod_10976_Text_P67-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

50

P10977		/P68-21 Part I			
Date Submitted	03/11/2024	**Section**	605.7	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Add stainless steel pipe line items to table

Rationale

See attached

P10977Text Modification

See attached

Page: 1

Mod10977_TextOfModification.pdf

P10977Text Modification

P68-21 Part I

Original Proposal

IPC: TABLE 605.7

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 605.7 VALVES

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASTM F1970; CSA B125.3; IAPMO Z1157; MSS SP-122
Copper or copper alloy	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASME B16.34; CSA B125.3; IAPMO Z1157; MSS SP-67; MSS SP-80; MSS SP-110; MSS SP-139
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; CSA B125.3; IAPMO Z1157; NSF 359
Gray iron and ductile iron	AWWA C500; AWWA C504; AWWA C507; IAPMO Z1157; MSS SP-67; MSS SP-70; MSS SP-71; MSS SP-72; MSS SP-78
Polypropylene (PP) plastic	ASME A112.4.14; ASTM F2389; IAPMO Z1157
Polyvinyl chloride (PVC) plastic	ASME A112.4.14; ASTM F1970; IAPMO Z1157; MSS SP-122
Stainless steel (Type 304/304L)	IAPMO Z1157
Stainless steel (Type 316/316L)	IAPMO Z1157

Reason: Adding line items for Stainless steel pipe (Type 304/304L) and Stainless steel pipe (Type 316/316L) to make the table reflective of what is currently available in the market and widely used in commercial applications. Including IAPMO Z1157 *Ball Valves* as an appropriate standard which is equivalent to other standards already included in this table as well as already listed with other materials and should be added to both Stainless steel pipe (Type 304/304L) and Stainless steel pipe (Type 316/316L) to increase the options for valves to be used in water supply installations.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Adding an additional standard option for stainless steel valves to be listed to will not increase or decrease the cost of construction. If anything, it has potential to decrease the cost since this increases the number of suppliers of valves that can be purchased.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Public Comments

Public Comment 1

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

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P10977Text Modification

TABLE 605.7 VALVES

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASTM F1970; CSA B125.3; IAPMO Z1157; MSS SP-122
Copper or copper alloy	ASME A112.4.14; ASME A112.18.1/CSA B125.1; ASME B16.34; CSA B125.3; IAPMO Z1157; MSS SP-67; MSS SP-80; MSS SP-110; MSS SP-139
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14; ASME A112.18.1/CSA B125.1; CSA B125.3; IAPMO Z1157; NSF 359
Gray iron and ductile iron	AWWA C500; AWWA C504; AWWA C507; IAPMO Z1157; MSS SP-67; MSS SP-70; MSS SP-71; MSS SP-72; MSS SP-78
Polypropylene (PP) plastic	ASME A112.4.14; ASTM F2389; IAPMO Z1157
Polyvinyl chloride (PVC) plastic	ASME A112.4.14; ASTM F1970; IAPMO Z1157; MSS SP-122
Stainless steel (Type 304/304L)	IAPMO Z1157, ASME A112.4.14
Stainless steel (Type 316/316L)	IAPMO Z1157, ASME A112.4.14

Commenter's Reason: Add ASME A112.4.14 *Manually Operated Valves for Use in Plumbing Systems*, to Stainless Steel 304/304L and 316/316L in this table as this standard covers valves in stainless steel as well as other materials already covered by ASME A112.4.14 in this table.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction Adding this standard already included in this table for other materials does not increase or decrease the cost.

Final Hearing Results

P68-21 Part I AMPC1

Page: 2

Mod_10977_Text_P68-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

51

P10979		/P74-21 Part I			
Date Submitted	03/11/2024	**Section**	605.14.2	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Add reference standards ASTM D2855-15 and F3328-18

Rationale

See attached

P10979Text Modification

See attached

Page: 1

Mod10979_TextOfModification.pdf

P74-21 Part II

Original Proposal

IRC: P2906.9.1.2, P2906.9.1.3, ASTM Chapter 44 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

2021 International Residential Code

Revise as follows:

P2906.9.1.2 CPVC plastic pipe. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer's installation instructions.
Solvent cement joints shall be permitted above or below ground.
Where such instructions require a primer to be used, an*approved* primer shall be applied, and a solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. The joint shall be made while the cement is wet, and in accordance with ASTM D2855.
Where such instructions allow for a one-step solvent cement, yellow or red in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet, and in accordance with ~~ASTM D2846 or ASTM F493~~. ASTM F3328
~~Solvent cement joints shall be permitted above or below ground~~.

P2906.9.1.3 CPVC/AL/CPVC pipe. Joint surfaces shall be clean and free from moisture, and an*approved* primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and in accordance with ~~ASTM D2846 or ASTM F493~~ ASTM D2855. Solvent-cemented joints shall be installed above or below ground.

Exception: A primer shall not be required where all of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM F493.
2. The solvent cement used is yellow in color.
3. The solvent cement is used only for joining 1/2-inch (12.7 mm) through 1-inch (25 mm) diameter CPVC/AL/CPVC pipe and CPVC fittings.
4. The CPVC fittings are manufactured in accordance with ASTM D2846.
5. The joint is made in accordance with ASTM F3328.

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

D2855-20	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
F3328-19	Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly(Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Public Hearing Results

Committee Action **As Submitted**

P10979Text Modification

Committee Reason: This adds an option to use a one step cement for PVC and provides a standard for assembling these types of joints. (7-4)

Final Hearing Results

P74-21 Part II AS

Page: 2

Mod_10979_Text_P74-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

52

P10981		/P75-21 Part I			
Date Submitted	03/11/2024	**Section**	605.14.2	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds green cement type

Rationale

See attached

P10981Text Modification

See attached

Page: 1

Mod10981_TextOfModification.pdf

P10981Text Modification

P75-21 Part I

Original Proposal

IPC: 605.14.2

Proponents: Forest Hampton, Lubrizol, Inc., Lubrizol, Inc. (forest.hampton@lubrizol.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

605.14.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe manufacturer's installation instructions. Where such instructions require that a primer be used, the primer shall be applied to the joint surfaces and a solvent cement orange in color and conforming to ASTM F493 shall be applied to the joint surfaces. Where such instructions allow for a one-step solvent cement, yellow or green in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet and in accordance with ASTM D2846 or ASTM F493. Solvent-cemented joints shall be permitted above or below ground.

Reason: Currently, it can be difficult to see the yellow solvent cement ring on a tan CTS CPVC joint during inspection. A high contrast cement has been asked for from the field to aid in the inspection of CPVC joints. The color green was chosen because of its high contrast against the tan pipe and fittings and green is not currently used to identify any other type of cement.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The addition of another one-step solvent cement color will not change the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This adds an option to help with field inspection. (14-0)

Final Hearing Results

P75-21 Part I AS

Page: 1

Mod_10981_Text_P75-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

53

P10982		/P76-21 Part I			
Date Submitted	03/11/2024	**Section**	605.15.2	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard ASTM and cement joint requirements

Rationale

See attached

P10982Text Modification

See attached

Page: 1

Mod10982_TextOfModification.pdf

P76-21 Part I

Original Proposal

IPC: 605.15.2, ASTM Chapter 15 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

605.15.2 Solvent cementing. Joint surfaces shall be clean and free from moisture, and an approved primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. The joint shall be made while the cement is wet, and in accordance with ~~ASTM D2846 or ASTM F493~~ASTM D2855. Solvent cement joints shall be permitted above or below ground.

Exception: A primer is not required where all of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM F493.
2. The solvent cement used is yellow in color.
3. The solvent cement is used only for joining $^1/_2$-inch (12.7 mm) through 2-inch-diameter (51 mm) CPVC/AL/CPVC pipe and CPVC fittings.
4. The CPVC fittings are manufactured in accordance with ASTM D2846.
5. The joint is made in accordance with ASTM F3328.

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

D2855-20	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
F3328-19	Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Reason: There are sections of the IPC and IRC allowing either two- or one-step use of PVC and CPVC cements in limited circumstances. The sections currently refer to inappropriate standards and the one and two step joining standards, ASTM F3328 and ASTM D2855, would be more appropriate to add.

For reference, these are the titles of the standards being changed in the proposal;

ASTM D2855-15 is, “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”

ASTM F3328-18 is, “Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets”

ASTM F493 -14 is, “Standard Specification for Solvent Cements for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe and Fittings”

ASTM D2846/D2846M-19a is, “Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Hot-and Cold-Water Distribution Systems”

P10982Text Modification

Bibliography: ASTM D2855 "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"
ASTM F3328 "Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets"

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal adds standards on properly making one or two step solvent cement joints and is not expected to increase or decrease the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (13-0)

Final Hearing Results

P76-21 Part I AS

Page: 2

Mod_10982_Text_P76-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

54

P10984		/P85-21			
Date Submitted	03/11/2024	**Section**	606.1	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds language for lower story buildings regarding full-open valves

Rationale

See attached

P10984Text Modification

See attached

Page: 1

Mod10984_TextOfModification.pdf

P10984Text Modification

P85-21

Original Proposal

IPC: 606.1

Proponents: Guy McMann, Jefferson County Govt., Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2021 International Plumbing Code

Revise as follows:

606.1 Location of full-open valves. *Full-open valves* shall be installed in the following locations:

1. On the building water service pipe from the public water supply near the curb.
2. On the water distribution supply pipe at the entrance into the structure.
   2.1. In multiple-tenant buildings, three stories and fewer, where a common water supply piping system is installed to supply other than one- and two-family dwellings, a main shutoff valve shall be provided for each tenant.
3. On the discharge side of every water meter.
4. On the base of every water riser pipe in occupancies other than multiple-family residential*occupancies* that are two stories or less in height and in one- and two-family residential *occupancies*.
5. On the top of every water down-feed pipe in*occupancies* other than one- and two-family residential*occupancies*.
6. On the entrance to every water supply pipe to a dwelling unit, except where supplying a single fixture equipped with individual stops.
7. On the water supply pipe to a gravity or pressurized water tank.
8. On the water supply pipe to every water heater.

Reason: This new language clarifies that this was intended to apply to smaller strip malls and the like. It was not intended to apply to high rise buildings as the text suggests.

Cost Impact: The code change proposal will decrease the cost of construction
This language will eliminate the need for high rise building to have separate shutoffs.

Public Hearing Results

Committee Action **Disapproved**

Committee Reason: The choice of 3 stories appears to be arbitrary. There isn't any indication that this exception was originally about strip malls. The committee believes that each tenant space should have a shutoff valve. (11-3)

Public Comments

Public Comment 1

Proponents: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., Self (jbengineer@aol.com); Dan Buuck, National

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Mod_10984_Text_P85-21.pdf

P10984 Text Modification

Association of Home Builders, National Association of Home Builders (dbuuck@nahb.org) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

606.1 Location of full-open valves . *Full-open valves* shall be installed in the following locations:

1. On the building water service pipe from the public water supply near the curb.
2. On the water distribution supply pipe at the entrance into the structure.
   2.1. In multiple-tenant buildings, three stories~~and~~ or less in height ~~fewer~~, where a common water supply piping system is installed to supply other than one- and two-family dwellings, a main shutoff valve shall be provided for each tenant.
3. On the discharge side of every water meter.
4. On the base of every water riser pipe in occupancies other than multiple-family residential*occupancies* that are two stories or less in height and in one- and two-family residential *occupancies*.
5. On the top of every water down-feed pipe in*occupancies* other than one- and two-family residential*occupancies*.
6. On the entrance to every water supply pipe to a dwelling unit, except where supplying a single fixture equipped with individual stops.
7. On the water supply pipe to a gravity or pressurized water tank.
8. On the water supply pipe to every water heater.

Commenter's Reason: Once the plumbing design is four stories or more in height, there is a change from horizontal to vertical piping as a cost savings measure. When the piping is vertical, it is not possible to provide a separate shut off valve for the entire tenant space. This would add considerable cost to the water piping system. In a vertical piping arrangement, often times the fixture between tenants are back to back. Each fixture has a shut off as does the riser. Hence, there is adequate ability to isolate the water supply to plumbing fixtures.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction This Public Comment merely clarifies the original intent of the change.

Final Hearing Results

P85-21 AMPC1

Page: 2

Mod_10984_Text_P85-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

55

P10985	/P89-21				
Date Submitted	03/11/2024	**Section**	607.2.1	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Language regarding commercial energy provisions

Rationale

See attached

P10985Text Modification

See attached

Page: 1

Mod10985_TextOfModification.pdf

P10985Text Modification

P89-21

Original Proposal

IPC: 607.2.1 (New)

Proponents: Joseph J. Summers, Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2021 International Plumbing Code

Add new text as follows:

607.2.1 Commercial energy provisions. In occupancies that are required to comply with the Commercial provisions of the International Energy Conservation Code, the developed length of hot or tempered water piping shall limited in accordance with Sections C404.5.1 through C404.5.2.1 of that code.

Reason: Requirements for hot water pipe sizing and lengths has been in the Commercial Provisions of the Energy code for several edition. Because the IPC did not have a pointer to the requirements, the requirements were sometimes overlooked. Adding the pointer clarifies the cod.
This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 9.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The requirement for hot water pipe sizing is already in the current code. This proposal only adds a pointer to the requirements and as such, there is no additional labor or materials to impact the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (13-1)

Final Hearing Results

P89-21 AS

Page: 1

Mod_10985_Text_P89-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

56

P10986	/P92-21				
Date Submitted	03/11/2024	**Section**	608.1	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

updates to the language and sizes of reference standards

Rationale

See Attached

P10986Text Modification

See attached

Page: 1

Mod10986_TextOfModification.pdf

P10986Text Modification

P92-21

Original Proposal

IPC: TABLE 608.1

Proponents: Jason Shank, ASSE International, ASSE International

2021 International Plumbing Code

Revise as follows:

TABLE 608.1 APPLICATION OF BACKFLOW PREVENTERS

Portions of table not shown remain unchanged.

DEVICE	DEGREE OF HAZARD[a]	APPLICATION[b]	APPLICABLE STANDARDS
Backflow prevention assemblies:			
Double check backflow prevention assembly ~~and double check fire protection backflow prevention assembly~~	Low hazard	Backpressure or backsiphonage Sizes ~~3/8"–16"~~ 1/4"-16"	ASSE 1015; AWWA C510; CSA B64.5; CSA B64.5.1
Double check detector fire protection backflow prevention assemblies	Low hazard	Backpressure or backsiphonage Sizes ~~2"~~ 1"–16"	ASSE 1048
Pressure vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/2"–2"	ASSE 1020; CSA B64.1.2
Reduced pressure principle backflow prevention assembly ~~and reduced pressure principle fire protection backflow assembly~~	High or low hazard	Backpressure or backsiphonage Sizes ~~3/8~~ 1/4"–16"	ASSE 1013; AWWA C511; CSA B64.4; CSA B64.4.1
Reduced pressure detector fire protection backflow prevention assemblies	High or low hazard	Backsiphonage or backpressure (automatic sprinkler systems)	ASSE 1047
Spill-resistant vacuum breaker assembly	High or low hazard	Backsiphonage only Sizes 1/4"–2"	ASSE 1056; CSA B64.1.3
Backflow preventer plumbing devices:			
Antisiphon-type fill valves for gravity water closet flush tanks	High hazard	Backsiphonage only	ASSE 1002/ASME A112.1002/CSA B125.12; CSA B125.3
Backflow preventer for carbonated beverage machines	Low hazard	Backpressure or backsiphonage Sizes ~~1/4"–3/8"~~ 1/4"-1/2"	ASSE 1022
Backflow preventer with intermediate atmospheric vents	Low hazard	Backpressure or backsiphonage Sizes 1/4"–3/4"	ASSE 1012; CSA B64.3
Backflow preventer with intermediate atmospheric vent and pressure-reducing valve.	Low hazard	Backpressure or backsiphonage Sizes ~~1/4"–3/4"~~ 1/2"-3/4"	ASSE 1081
Dual-check-valve-type backflow preventer	Low hazard	Backpressure or backsiphonage Sizes ~~1/4"–4"~~ 2"	ASSE 1024; CSA B64.6
Hose connection backflow preventer	High or low hazard	Low head backpressure, rated working pressure, backpressure or backsiphonage Sizes 1/2"–1"	ASME A112.21.3; ASSE 1052; CSA B64.2.1.1
Hose connection vacuum breaker	High or low hazard	Low head backpressure or backsiphonage Sizes 1/2", 3/4", 1"	ASME A112.21.3; ASSE 1011; CSA B64.2; CSA B64.2.1
Laboratory faucet backflow preventer	High or low hazard	Low head backpressure and backsiphonage Sizes 1/8" - 8"	ASSE 1035; CSA B64.7
Pipe-applied atmospheric-type vacuum breaker	High or low hazard	Backsiphonage only Sizes ~~1/4"–4"~~	ASSE 1001; CSA B64.1.1
Vacuum breaker wall hydrants, frost-resistant, automatic-draining-type	High or low hazard	Low head backpressure or backsiphonage Sizes 3/4", 1"	ASME A112.21.3; ASSE 1019; CSA B64.2.2
Other means or methods:			
Air gap	High or low hazard	Backsiphonage or backpressure	ASME A112.1.2
Air gap fittings for use with plumbing fixtures, appliances and appurtenances	High or low hazard	Backsiphonage or backpressure	ASME A112.1.3
Barometric loop	High or low hazard	Backsiphonage only	(See Section 608.14.4)

For SI: 1 inch = 25.4 mm.

a. Low hazard—See Pollution (Section 202).
High hazard—See Contamination (Section 202).

b. See Backpressure, low head (Section 202, Backflow).
See Backsiphonage (Section 202, Backflow).

Reason: The changes being proposed are updates to the language and sizes in the current versions of these standards.

Page: 1

Mod_10986_Text_P92-21.pdf

P10986Text Modification

Cost Impact: The code change proposal will not increase or decrease the cost of construction
These devices are still being required.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This is a simple update on the sizes that are available for backflow preventers. (14-0)

Final Hearing Results

P92-21 AS

Page: 2

Mod_10986_Text_P92-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

57

P10987		/P99-21			
Date Submitted	03/11/2024	**Section**	608.17.1.2	**Proponent**	Mo Madani
Chapter	6	**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 - P.

Summary of Modification

Adds ASSE reference Standard requirements

Rationale

See attached

P10987Text Modification

See attached

Page: 1

Mod10987_TextOfModification.pdf

P10987Text Modification

P99-21

Original Proposal

IPC: 608.17.1.2, ASSE Chapter 15 (New)

Proponents: Chris Haldiman, Watts Water Technologies, Watts Water Technologies (chris.haldiman@wattswater.com); Cameron Rapoport, Watts, Watts (cameron.rapoport@wattswater.com)

2021 International Plumbing Code

Revise as follows:

608.17.1.2 Coffee machines and noncarbonated drink dispensers. The water supply connection to each coffee machine and each noncarbonated beverage dispenser shall be protected against backflow by a backflow preventer conforming to ASSE 1022, ~~or~~ ASSE 1024, ASSE 1032 or protected by an *air gap* .

Add new standard(s) as follows:

ASSE

ASSE International
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448

1032- 2004(R2021) Dual Check Valve Type Backflow Preventers for Carbonated Beverage Dispensers – Post Mix Type

Reason: Post-mix type carbonated beverage dispensers present a higher hazard than non-carbonated beverage dispensers, and therefore the added protection of an atmospheric vent in an ASSE 1022 compliant device is appropriate. However, non-carbonated beverage dispensers present less of a hazard as they do not produce carbonic acid, and therefore a dual check would be an appropriate device. There are two ASSE standards for dual checks, 1032 and 1024.
Though ASSE 1032 states it is specifically for carbonated beverage, examination of the standard leaves no reason it would not be appropriate for non-carbonated beverage. Additionally, ASSE 1032 are more commonly available in appropriate sizes (1/4", 3/8") than ASSE 1024 devices, and with more appropriate end connections given that their intended application is for beverage dispensing.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There is no cost impact, it just offers increased device choices.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The current title of the standard (and the scope of the standard is for "carbonated" beverage dispensers. This might create confusion in a code section addressing only non-carbonated dispensers. The standard needs to be changed before proposing this to the code. (14-0)

Final Hearing Results

P99-21 AS

Page: 1

Mod_10987_Text_P99-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

58

P10988		/P106-21			
Date Submitted	03/12/2024	**Section**	608.17.1.2	**Proponent**	Mo Madani
Chapter	6	**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 -P.

Summary of Modification

Adds reference standard language for ASSE 1032

Rationale

See attached

P10988Text Modification

See attached

Page: 1

Mod10988_TextOfModification.pdf

P10988Text Modification

P99-21

Original Proposal

IPC: 608.17.1.2, ASSE Chapter 15 (New)

Proponents: Chris Haldiman, Watts Water Technologies, Watts Water Technologies (chris.haldiman@wattswater.com); Cameron Rapoport, Watts, Watts (cameron.rapoport@wattswater.com)

2021 International Plumbing Code

Revise as follows:

608.17.1.2 Coffee machines and noncarbonated drink dispensers. The water supply connection to each coffee machine and each noncarbonated beverage dispenser shall be protected against backflow by a backflow preventer conforming to ASSE 1022, ~~or~~ ASSE 1024, ASSE 1032 or protected by an *air gap* .

Add new standard(s) as follows:

ASSE

ASSE International
18927 Hickory Creek Drive, Suite 220
Mokena, IL 60448

1032- 2004(R2021) Dual Check Valve Type Backflow Preventers for Carbonated Beverage Dispensers – Post Mix Type

Reason: Post-mix type carbonated beverage dispensers present a higher hazard than non-carbonated beverage dispensers, and therefore the added protection of an atmospheric vent in an ASSE 1022 compliant device is appropriate. However, non-carbonated beverage dispensers present less of a hazard as they do not produce carbonic acid, and therefore a dual check would be an appropriate device. There are two ASSE standards for dual checks, 1032 and 1024.
Though ASSE 1032 states it is specifically for carbonated beverage, examination of the standard leaves no reason it would not be appropriate for non-carbonated beverage. Additionally, ASSE 1032 are more commonly available in appropriate sizes (1/4", 3/8") than ASSE 1024 devices, and with more appropriate end connections given that their intended application is for beverage dispensing.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There is no cost impact, it just offers increased device choices.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The current title of the standard (and the scope of the standard is for "carbonated" beverage dispensers. This might create confusion in a code section addressing only non-carbonated dispensers. The standard needs to be changed before proposing this to the code. (14-0)

Final Hearing Results

P99-21 AS

Page: 1

Mod_10988_Text_P99-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

59

P11681		/P87-21 Part I			
Date Submitted	05/15/2024	**Section**	604.4	**Proponent**	Mo Madani
Chapter	6	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds footnote c to Table 604.4. Adds new standard USEPA 2018.

Rationale

See attached

P11681Text Modification

See attached

Page: 1

Mod11681_TextOfModification.pdf

P87-21 Part I

Original Proposal

IPC: TABLE 604.4, USEPA (New), (New)

Proponents: Edward R. Osann, Natural Resources Defense Council, Natural Resources Defense Council (eosann@nrdc.org); Sharon Bonesteel, salt river project, salt river project (sharon.bonesteel@srpnet.com); David Collins, The Preview Group, Inc., The Preview Group, Inc. (dcollins@preview-group.com); Anthony Floyd, City of Scottsdale, City of Scottsdale (afloyd@scottsdaleaz.gov)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 604.4 MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS

Portions of table not shown remain unchanged.

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY[b]
Shower head[a,c]	2.0 2.5 gpm at 80 psi

For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. A hand-held shower spray is a shower head.

b. Consumption tolerances shall be determined from referenced standards.

c. Shower heads shall comply with USEPA WaterSense Specification for Showerheads.

Add new text as follows:

Add new standard(s) as follows:

USEPA WaterSense Specification for Showerheads Version 1.1, July 26, 2018

Reason: Showerheads operating at 2.0 gpm at 80 psi are commonly available and perform well. The U.S. EPA's WaterSense specification of 2.0 gpm was first adopted in 2010, along with criteria that ensure adequate spray pattern, spray force, and minimum flow at pressures less than 80 psi. Based on the most recent reports of participating manufacturers, more than 10,000 models from over 200 brands currently meet all WaterSense specifications, demonstrating the widespread availability and commercial viability of efficient showerheads. One factor in customer acceptance is the growing use of built-in pressure compensation, by which a showerhead will perform at its rated flow, even in buildings or portions of buildings with low water pressure.

For designers of plumbing systems, it is important to match the building's water distribution system with the anticipated performance of fixture fittings such as showerheads. Plumbing systems designed to meet the 2024 IPC should accommodate the nation's ongoing transition to high-efficiency showerheads. Water, energy, and materials will be saved if plumbing distribution systems are right-sized at the time of construction.

The WaterSense label is easily recognizable, and will allow building officials to easily verify compliance with this provision.

There are significant water, energy, and greenhouse gas savings that would accrue nationwide if all newly installed showerheads met the WaterSense specification beginning in 2025, the earliest practical application of the IPC as modified by this proposal. Even accounting for several states that have already require efficient showerheads, the potential for further savings are substantial. These savings, drawn from

the supporting analysis of a November 2020 report by the Appliance Standards Awareness Project, would reach the following:

Estimated Savings from Efficient (2.0 gpm) Showerheads Effective 2025

Annual Savings in 2035

- Electricity (TWh) 4.1
- Nat gas & oil (TBtu) 25.8
- Water (billion gallons) 79.5
- Utility bills (billion 2019 $) 1.9
- CO2 reductions (MMT)
- --- Low-carbon grid scenario 1.9
- --- AEO reference case 2.7

Annual Savings in 2050

- Electricity (TWh) 4.1
- Nat gas & oil (TBtu) 25.8
- Water (billion gallons) 79.5
- Utility bills (billion 2019 $) 2.1
- CO2 reductions (MMT)
- --- Low-carbon grid scenario 1.7
- --- AEO reference case 2.5

Cumulative Savings through 2050

- Energy (Quads) 1.3
- Water (billion gallons) 1,669
- Utility bills (billion 2019 $) 41.4
- CO2 reductions (MMT)
- --- Low-carbon grid scenario 38.4
- --- AEO reference case 54.8

Cost-effectively reducing unnecessary water use is an integral part of the stated purpose of the International Plumbing Code. As noted in Chapter 1 of the 2021 Edition, "101.3 Purpose. The purpose of this code is to establish minimum requirements to provide a reasonable level of safety, health, property protection, and general welfare by regulating and controlling the design, construction, installation, quality of materials, location, operation and maintenance or use of plumbing equipment and systems." Nothing is more fundamental to health, safety, property protection, and general welfare than the maintenance of adequate water supplies. Water-saving technologies, such as showerheads meeting EPA WaterSense criteria, help building occupants save water, energy, and utility bills, while helping to ensure that drinking water supplies are maintained at safe and reliable levels, protecting human health and firefighting capability, as well as environmental resources.

Bibliography: U.S. Environmental Protection Agency, *WaterSense Specification for Showerheads, version 1.1*, July 26, 2018, available at <https://www.epa.gov/watersense/showerheads#Showerhead%20Specification>.
Mauer, J. and deLaski, A., *A Powerful Priority: How Appliance Standards Can Help Meet U.S. Climate Goals and Save Consumers Money,* Appliance Standards Awareness Project and American Council for an Energy-Efficient Economy, November 2020, available at <https://appliance-standards.org/document/report-overview-powerful-priority-how-appliance-standards-can-help-meet-us-climate-goals>.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Showerheads that meet WaterSense criteria are widely available and competitively priced.

Public Hearing Results

Committee Action **As Modified**

P11681Text Modification

Committee Modification: TABLE 604.4 MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGS

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY[b]
Shower head[a,c]	2.0 gpm at 80 psi

For SI: 1 gallon = 3.785 L, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. A hand-held shower spray is a shower head.

b. Consumption tolerances shall be determined from referenced standards.

c. Shower heads shall comply with all requirements for high-efficiency showerheads in ASME A112.18.1/CSA B125.1~~USEPA WaterSense Specification for Showerheads~~.

~~USEPA~~
~~WaterSense Specification for Showerheads Version 1.1, July 26, 2018~~

Committee Reason: For the modification: Referencing the Water Sense standard would be a mistake as that non-consensus standard is likely to ratchet down to lower flow rates. It is better to refer to the requirements for high-efficiency showerheads that are already addressed in the current (consensus) ASME product standard. (8-6)
For the proposal As Modified: The Committee agreed with the published reason statement. (8-7)

Final Hearing Results

P87-21 Part I AM

Page: 3

Mod_11681_Text_P87-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

60

P10989		/P107-21			
Date Submitted	03/12/2024	**Section**	702.3	**Proponent**	Mo Madani
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Add new reference standard ASTM F2763-16

Rationale

See attached

P10989Text Modification

See attached

Page: 1

Mod10989_TextOfModification.pdf

P10989Text Modification

P107-21

Original Proposal

IPC: TABLE 702.3, ASTM Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 702.3 BUILDING SEWER PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe (Profile Wall)	ASTM F2763

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F2763-16 Standard Specification for 12 to 60 in. [300 to 1500 mm] Dual and Triple Profile-Wall Polyethylene (PP) Pipe and Fittings for Sanitary Sewer Applications

Reason: ASTM F2763 is a 12 to 60 inch corrugated dual and triple wall sanitary sewer product with pipe wall stiffness at a minimum of 46 psi. The standard is being added for communities that may want a higher stiffness corrugated HDPE pipe. The standard has been in place since 2011.

Bibliography: ASTM F2763 - Standard Specification for 12 to 60 in. [300 to 1500 mm] Dual and Triple Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Because installation standards vary, so do the installed cost of ASTM F2763 pipe. Typically when corrugated HDPE pipes are used, there is a savings on installation costs.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This is a valid standard to include in the code to provide another option for building sewer piping. (14-0)

Final Hearing Results

P107-21 AS

Page: 1

Mod_10989_Text_P107-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

61

P10990		/P108-21			
Date Submitted	03/12/2024	**Section**	702.3	**Proponent**	Mo Madani
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard ASTM F2947/F2947M-20

Rationale

See attached

P10990Text Modification

See attached

Page: 1

Mod10990_TextOfModification.pdf

P10990Text Modification

P108-21

Original Proposal

IPC: TABLE 702.3, ASTM Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 702.3 BUILDING SEWER PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe (corrugated wall)	ASTM F2947/F2947M

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F2947/F2947M-20 Standard Specification for 150 to 1500 mm [6 to 60 in] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

Reason: ASTM F2947/F2947M - Standard Specification for 150 to 1500 mm [6 to 60 in.] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications is a pipe product with a variable stiffness outer wall based on pipe diameter. The product has an enhanced liner for improved hydraulic conductivity. The standard incorporates recycled content material without compromising the products longevity or performance. Recent improvements to the standard makes it a viable addition to IPC at this time.

Bibliography: ASTM F2947/F2947M - Standard Specification for 150 to 1500 mm [6 to 60 in.] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Based on installation requirements and the products that are commonly being used, ASTM F2947/F2947M pipe may or may not provide a construction cost savings.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P108-21 AS

Page: 1

Mod_10990_Text_P108-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

62

P10991		/P111-21			
Date Submitted	03/13/2024	**Section**	702.6	**Proponent**	Mo Madani
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds drainage language to the section

Rationale

See attached

P10991Text Modification

See attached

Page: 1

Mod10991_TextOfModification.pdf

P10991Text Modification

P111-21

Original Proposal

IPC: 702.6, 901.3, TABLE 702.6 (New), 902.1.1 (New), ASTM Chapter 15 (New)

Proponents: Brian Helms, Charlotte Pipe and Foundry, Charlotte Pipe and Foundry (brian.helms@charlottepipe.com)

2021 International Plumbing Code

Revise as follows:

702.6 Chemical waste drainage system. A chemical wastedrainage system, including its vent system, shall be completely ~~separated~~ independent from the sanitary drainage system. Separate drainage systems for chemical waste and vent pipes shall conform to one of the standards indicated in Table 702.6. The chemical waste shall be treated in accordance with Section 803.2 before discharging to the sanitary drainage system. ~~Separate drainage systems for chemical wastes and vent pipes shall be of an~~*~~approved~~* ~~material that is~~ Chemical waste drainage system pipe and fitting materials shall be resistant to temperature, corrosion and degradation for the concentrations of chemicals involved per manufacturer recommendations.

901.3 Chemical waste drainage vent systems. The vent system for a chemical waste drainage system shall be independent of ~~the sanitary vent system and shall terminate separately~~ any sanitary drainage vent system. The termination of a chemical waste drainage vent system shall be through the roof to the outdoors or to an air admittance valve that complies with ASSE 1049. Air admittance valves for chemical waste drainage systems shall be constructed of one of the materials ~~*approved* in accordance with Section~~ listed in table 702.6 and shall be tested for chemical resistance in accordance with ASTM F1412.

Add new text as follows:

TABLE 702.6 CHEMICAL WASTE DRAINAGE SYSTEM PIPE AND FITTINGS

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC)	ASTM F2618
Borosilicate glass	ASTM C1053
High silicon iron	ASTM A518/A518M
Polypropylene (PP)	ASTM F1412
Polyvinylidene flouride (PVDF)	ASTM F1673

902.1.1 Chemical waste drainage system vents. The pipe and fitting materials for a chemical waste drainage vent system shall be in accordance with Section 702.6. The methods utilized for construction and installation of such venting system shall be in accordance with the pipe and fitting manufacturers' instructions.

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F2618-19 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems

Page: 1

Mod_10991_Text_P111-21.pdf

P10991Text Modification

A518/A518M-99(2018) Standard Specification for Corrosion-Resistant High-Silicon Iron Castings

Reason: Chemical waste drainage applications are very different from sanitary drainage applications regulated in Chapter 7. Chemical waste drainage applications can vary in complexity and may be included projects ranging from K-12 chemistry labs to biomedical facilities. Many chemical waste drainage applications require pipe and fitting systems that have both higher temperature capability and resistance to a variety of chemicals and substances that typical DWV are not suitable for. Pipe and fitting materials that are manufactured to standards for chemical waste drainage applications are specifically designed to convey waste that may be detrimental to DWV and other non-pressure systems and that may be harmful to the health and safety of the public.
The code currently provides very specific direction on allowable materials for sanitary drainage systems but is not as specific for chemical waste in 702.6. Currently, the code states that these systems have to be separated from the sanitary system in section 702.6 and even gives direction on system design in section 803.2, but is very vague on what materials are acceptable for chemical waste applications.

Section 702.6 currently requires an "approved" material for chemical waste systems. By definition in Chapter 2, "approved" means that the material should be "acceptable to the code official." This proposal removes this statement as well as the responsibility of the official to determine whether the materials used are suitable for both temperature and chemical resistance requirements that can be unique to each project. Instead this proposal replaces this language with the addition of a table that includes ALL piping systems manufactured to standards specifically for chemical waste drainage and that are also third party listed for these applications for easy enforcement of the code.

Since no single piping system is chemically resistant to every chemical and substance that man has made, manufacturers recommendations regarding chemical resistance, temperature capability and installation should be referenced by the installer or designer when choosing a material for chemical waste drainage. References to manufacturers recommendations have been included in this proposal.

This proposal also adds new text for chemical waste drainage system vents as well. Materials used for venting chemical waste drainage systems are exposed to the same chemicals and substances (in gas form) that the drainage system is and should be held to the same requirements.

The current requirements for chemical waste drainage systems are too vague and unenforceable. This code change proposal clarifies the code requirements by revising section 702.6 and adding a table for allowable materials for chemical waste drainage applications. In addition, it revises section 901.3 and adds new text for chemical waste vent materials.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change proposal will not increase or decrease the cost of construction because it is intended to clarify allowable, third party certified products appropriate for chemical waste drainage applications.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
TABLE 702.6 CHEMICAL WASTE DRAINAGE SYSTEM PIPE AND FITTINGS

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC)	ASTM F2618
Borosilicate glass	ASTM C1053
High silicon iron	ASTM A518/A518M
~~Polypropylene (PP)~~ Polyolefin	ASTM F1412, CSA B181.3
Polyvinylidene fluoride (PVDF)	ASTM F1673, CSA B181.3

Committee Reason: For the modification: The CSA standard (already in the reference standards chapter) is also applicable to these products. Polyolefin is a broader term for these products.
For the proposal as modified: The Committee agreed that this a needed addition to the code to help the the code official approve piping waste piping. However, the Committee requests that the proponent bring this back back in public comment to change the phrase "resistant to temperature" to "suitable for the temperature of the waste." (14-0)

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Mod_10991_Text_P111-21.pdf

P10991Text Modification

Public Comments

Public Comment 1

Proponents: Brian Helms, Charlotte Pipe and Foundry, Charlotte Pipe and Foundry (brian.helms@charlottepipe.com) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

702.6 Chemical waste drainage system. A chemical waste drainage system, including its vent system, shall be completely independent from the sanitary drainage system. Separate drainage systems for chemical waste and vent pipes shall conform to one of the standards indicated in Table 702.6. The chemical waste shall be treated in accordance with Section 803.2 before discharging to the sanitary drainage system. Chemical waste drainage system pipe and fitting materials shall be resistant to ~~temperature,~~ corrosion and degradation for the concentrations of chemicals involved per manufacturer recommendations.

901.3 Chemical waste ~~drainage vent~~ drainage vent systems . The vent system for a chemical waste drainage system shall be independent of any sanitary drainage vent system. The termination of a chemical waste drainage vent system shall be through the roof to the outdoors or to an air admittance valve that complies with ASSE 1049. Air admittance valves for chemical waste drainage systems shall be constructed of one of the materials listed in table 702.6 and shall be tested for chemical resistance in accordance with ASTM F1412.

TABLE 702.6 CHEMICAL WASTE DRAINAGE SYSTEM PIPE AND FITTINGS

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC)	ASTM F2618
Borosilicate glass	ASTM C1053
High silicon iron	ASTM A518/A518M
Polyolefin	ASTM F1412, CSA B181.3
Polyvinylidene flouride (PVDF)	ASTM F1673, CSA B181.3

902.1.1 Chemical waste drainage system vents . The pipe and fitting materials for a chemical waste drainage vent system shall be in accordance with Section 702.6. The methods utilized for construction and installation of such venting system shall be in accordance with the pipe and fitting manufacturers' instructions.

Commenter's Reason: During the Committee Action Hearings, Vice Chair Gregg Gress expressed concern regarding the use of the phrase, "resistant to temperature". This phrase has been removed per his recommendation. A material's temperature capability is included in the manufacturers recommendations, which is already included in the proposal.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction The public comment as well the original proposal and modification will not increase or decrease the cost of construction.

Final Hearing Results

P111-21 AMPC1

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Mod_10991_Text_P111-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

63

P11025		/P120-21 Part I			
Date Submitted	03/13/2024	**Section**	702.1	**Proponent**	Mo Madani
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard ASTM F3371-19 requirements

Rationale

See attached

P11025Text Modification

See attached

Page: 1

Mod11025_TextOfModification.pdf

P120-21 Part I

Original Proposal

IPC: TABLE 702.1, TABLE 702.2, TABLE 702.4, 705.13.1, ASTM Chapter 15 (New)

Proponents: William Chapin, Professional Code Consulting, LLC, Professional Code Consulting, LLC (bill@profcc.us)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 702.1 ABOVE-GROUND DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; ASTM F628; ASTM F1488; CSA B181.1
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
Galvanized steel pipe	ASTM A53
Glass pipe	ASTM C1053
Polyolefin pipe	ASTM F1412; ASTM F3371; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200), and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2665; ASTM F891; ASTM F1488; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949; ASTM F1488
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1

TABLE 702.2 UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; ASTM F628; ASTM F1488; CSA B181.1
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75; ASTM B88; ASTM B251; ASTM B306
Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F714
Polyolefin pipe	ASTM F714; ASTM F1412; ASTM F3371; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including Schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2665; ASTM F891; ASTM F1488; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949; ASTM F1488
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3
Stainless steel drainage systems, Type 316L	ASME A112.3.1

For SI: 1 inch = 25.4 mm.

TABLE 702.4 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters	ASME A112.4.4; ASTM D2661; ASTM F628; CSA B181.1
Acrylonitrile butadiene styrene (ABS) plastic pipe in sewer and drain diameters	ASTM D2751
Cast iron	ASME B16.4; ASME B16.12; ASTM A74; ASTM A888; CISPI 301
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29
Glass	ASTM C1053
Gray iron and ductile iron	AWWA C110/A21.10
Polyethylene	ASTM D2683
Polyolefin	ASTM F1412; ASTM F3371; CSA B181.3
Polyvinyl chloride (PVC) plastic in IPS diameters	ASME A112.4.4; ASTM D2665; ASTM F1866
Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters	ASTM D3034
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D.	ASTM D2949
Polyvinylidene fluoride (PVDF) plastic pipe	ASTM F1673; CSA B181.3

P11025Text Modification

MATERIAL	STANDARD
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1
Steel	ASME B16.9; ASME B16.11; ASME B16.28
Vitrified clay	ASTM C700

For SI: 1 inch = 25.4 mm.

705.13.1 Heat-fusion joints. Heat-fusion joints for polyolefin pipe and tubing joints shall be installed with socket-type heat-fused polyolefin fittings or electrofusion polyolefin fittings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM F1412, ASTM F3371 or CSA B181.3.

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F3371-19 Standard Specification for Polyolefin Pipe and Fittings for Drainage, Waste, and Vent

Reason: ASTM F1412 for corrosive waste is currently being used for typical DWV applications. There is no restriction within F1412 to not allow this and still should be referenced, but it is overly restrictive for manufacturer to make polyolefin pipe/fittings for typical DWV applications to have to go to the extreme of a chemical resistance test in F1412 if the product was not to be used for corrosive waste. For this reason, ASTM F3371 was developed and published as it includes the same requirements as F1412 minus the chemical resistance testing. Also note that other ASTM standards for DWV application do not include a chemical resistance test.

Bibliography: ASTM F3371-19 Standard Specification for Polyolefin Pipe and Fittings for Drainage, Waste, and Vent

Applications

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Options to comply with the code usually allow for decreases in the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P120-21 Part I AS

Page: 2

Mod_11025_Text_P120-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

64

P11027		/P124-21			
Date Submitted	03/13/2024	**Section**	705.16	**Proponent**	Mo Madani
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Clarifies language on coupling types and removes confusing language

Rationale

See attached

P11027Text Modification

See attached

Page: 1

Mod11027_TextOfModification.pdf

P11027Text Modification

P124-21

Original Proposal

IPC: 705.16, 705.2.4 (New), 705.10.5 (New)

Proponents: Pennie Feehan, Chair of PMGCAC, Chair of PMGCAC (PMGCAC@iccsafe.org)

2021 International Plumbing Code

Revise as follows:

705.16 Joints between different materials. Joints between different piping materials shall be made with a mechanical joint ~~of the compression or mechanical-sealing type~~ conforming to ASTM C1173, ASTM C1460 or ASTM C1461. Connectors and adapters shall be *approved* for the application and such joints shall have an elastomeric seal conforming to ASTM C425, ASTM C443, ASTM C564, ASTM C1440, ASTM F477, CSA A257.3M or CSA B602, or as required in Sections 705.16.1 through 705.16.7. Joints between glass pipe and other types of materials shall be made with adapters having a TFE seal. Joints shall be installed in accordance with the manufacturer's instructions.

Add new text as follows:

705.2.4 Mechanical joints above ground. Mechanical joint couplings used above ground to connect ABS pipe to ABS pipe shall be of the shielded type and shall be marked by the manufacturer as being recommended for the application.

705.10.5 Mechanical joints above ground. Mechanical joint couplings used above ground to connect PVC pipe to PVC pipe shall be of the shielded type and shall be marked by the manufacturer as being recommended for the application.

Reason: This proposal has two purposes:
The change in Section 705.16 removes contradictory information on coupling types. A coupling cannot be both mechanical and a compression joint. Removing the existing language does not prohibit the use of compression gaskets which are already covered by the elastomeric gasket standards referenced.

The addition of new sections 705.2.4 and 705.10.5 is to clear up questions as to whether mechanical joint couplings can be used to connect the same types of piping material, specifically PVC to PVC and ABS to ABS. Section 705.16 speaks to using mechanical couplings to connect different piping materials. Examples are, galvanized steel-to-PVC, and cast iron-to-PVC. The obvious question is: If one end of elastomeric-type mechanical coupling is suitable to install on a PVC pipe, why wouldn't the other end be suitable to be installed on a PVC pipe? Mechanical couplings made for connecting the same sizes of steel and PVC pipes are dimensionally identical on both ends. Several manufacturers of these type of couplings mark their same size (on both ends) couplings suitable for PL-ST to PL-ST. For example:

1-1/2 inch CI, PL or ST to 1-1/2 inch CI, PL or ST

2 inch CI, PL or ST to 2 inch CI, PL or ST

3 inch PL, ST or XHCI to 3 inch PL, ST or XHCI

4 inch PL, ST or XHCI to 4 inch PL, ST or XHCI

6 inch PL, ST or XHCI to 6 inch PL, ST or XHCI

There are many situations where use of this type of coupling is necessary to perform the work. Examples are "cutting in" a wye into a stack or horizontal drain for the addition of fixtures and repairing a broken section of piping. Is it likely that someone would install a new piping system using these mechanical couplings? No because the cost of these couplings are much more than solvent-welded couplings.

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Mod_11027_Text_P124-21.pdf

P11027Text Modification

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 23.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal only clarifies the code. Clarifications of existing requirements do not change material or labor costs and therefore, do not impact the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P124-21 AS

Page: 2

Mod_11027_Text_P124-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

65

P11682		/P117-21 Part I			
Date Submitted	05/15/2024	**Section**	705.10.2	**Proponent**	Mo Madani
Chapter	7	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds an exception 3 to Section 705.10.2 Solvent cementing. Adds new standard F3328-19.

Rationale

See attached

P11682Text Modification

See attached

Page: 1

Mod11682_TextOfModification.pdf

P11682Text Modification

P117-21 Part I

Original Proposal

IPC: 705.10.2, ASTM Chapter 15 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

705.10.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer that conforms to ASTM F656 shall be applied. Solvent cement not purple in color and conforming to ASTM D2564, CSA B137.3, CSA B181.2 or CSA B182.1 shall be applied to all joint surfaces. The joint shall be made while the cement is wet and shall be in accordance with ASTM D2855. Solvent-cement joints shall be permitted above or below ground.

Exception: A primer is not required where both of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM D2564.
2. The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in nonpressure applications in sizes up to and including 4 inches (102 mm) in diameter.
3. The joint is made in accordance with ASTM F3328.

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F3328-19	Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Reason: ASTM F3328-18 is titled, "Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets" and is intended to instruct users on how to make one step joints in PVC and CPVC.

Bibliography: ASTM F3328 Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The use of an ASTM instructional type standard is not expected to raise or lower the costs of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (13-0)

Page: 1

Mod_11682_Text_P117-21 Part I.pdf

P11682Text Modification

Final Hearing Results

P117-21 Part I AS

Page: 2

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TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

66

P11028		/P135-21			
Date Submitted	03/13/2024	**Section**	1102.7	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds ASTM F2763-1 requirements

Rationale

See attached

P11028Text Modification

See attached

Page: 1

Mod11028_TextOfModification.pdf

P11028Text Modification

P135-21

Original Proposal

IPC: TABLE 1102.7, TABLE 1102.4, ASTM Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 1102.7 PIPE FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; ASTM F2763

TABLE 1102.4 BUILDING STORM SEWER PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M; ASTM F2763

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F2763-16 Standard Specification for 12 to 60 in. [300 to 1500 mm] Dual and Triple Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

Reason: ASTM F2763 is proposed for addition to table 1102.4 - BUILDING STORM SEWER PIPE because it has a uniform pipe stiffness o no less than 46 psi. The pipe was developed for the sanitary sewer market, but because of its high performance the product excellent for use in storm drainage applications. ASTM F2763 also covers fittings, which is why it is being proposed for addition to Table 1102.7 - PIPE FITTINGS

Bibliography: ASTM F2763 - Standard Specification for 12 to 60 in. [300 to 1500 mm] Dual and Triple Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Based on the products ASTM F2763 pipe is competing against, the installation costs could be less but certainly not more.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P135-21 AS

Page: 1

Mod_11028_Text_P135-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

67

P11076		/P136-21			
Date Submitted	03/14/2024	**Section**	1102.4	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements for CSA 182.8 i

Rationale

See attached

P11076Text Modification

See attached

Page: 1

Mod11076_TextOfModification.pdf

P11076Text Modification

P136-21

Original Proposal

IPC: TABLE 1102.4, CSA Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 1102.4 BUILDING STORM SEWER PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M;CSA B182.8

Add new standard(s) as follows:

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland, OH 44131-5516

B182.8-18 Profile Polyethylene (PE) Storm Sewer and Drainage Pipe and Fittings

Reason: CSA 182.8 is the standard for profile polyethylene (PE) storm sewer and drainage pipe and fittings. The standard is commonly referenced in Canada. The reference will help tie both standards together.

Bibliography: CSA B182.8 - Profile polyethylene (PE) storm sewer and drainage pipe and fittings

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The addition of CSA B182.8 is similar to existing ASTM standards in Table 1102.4 and will not increase of decrease the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P136-21 AS

Page: 1

Mod_11076_Text_P136-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

68

P11077		/P138-21			
Date Submitted	03/14/2024	**Section**	1102.7	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements of ASTM F2764/2764M-19

Rationale

See attached

P11077Text Modification

See attached

Page: 1

Mod11077_TextOfModification.pdf

P11077Text Modification

P138-21

Original Proposal

IPC: TABLE 1102.7, TABLE 1102.4, ASTM Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 1102.7 PIPE FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polypropylene (PP) plastic pipe	ASTM F2764

TABLE 1102.4 BUILDING STORM SEWER PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polypropylene (PP) pipe	ASTM F2764; ASTM F2881; CSA B182.13

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F2764/2764M-19 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

Reason: ASTM F2764/F2764M is being proposed for addition to Table 1102.4 - BUILDING STORM SEWER PIPE because it is an excellent storm sewer product. On projects where a higher preforming corrugated polypropylene pipe is desired, ASTM F2764/F2764M should be called out over ASTM F2881, which is already a part of Table 1102.4. ASTM F2764/F2764M is also a fittings standard, which is why it is being recommended for addition to Table 1102.7 - PIPE FITTINGS.

Bibliography: ASTM F2764/F2764M - 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

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Although the ASTM F2764/F2764M is more expensive than listed standard ASTM F2881, based on installation requirements it may be more or less expensive to install.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

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Mod_11077_Text_P138-21.pdf

P11077Text Modification

P138-21 AS

Mod_11077_Text_P138-21.pdf Page: 2

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P11078		/P139-21			
Date Submitted	03/14/2024	**Section**	1102.7	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements for ASTM F2881/F2881M

Rationale

See attached

P11078Text Modification

See attached

Page: 1

Mod11078_TextOfModification.pdf

P11078Text Modification

P139-21

Original Proposal

IPC: TABLE 1102.7, ASTM Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 1102.7 PIPE FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polypropylene (PP) plastic pipe	ASTM F2881/F2881M

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F2881/F2881M-19 Standard Specification for 12 to 60 in. [300 to 1500 mm] Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications

Reason: ASTM F2881/F2881M exists in Table 1102.4 - BUILDING STORM SEWER PIPE and inadvertently was not added to Table 1102.7 - PIPE FITTINGS. The standard covers fittings that are commonly used in storm sewers.

Bibliography: ASTM F2881/F2881M - Standard Specification for 12 to 60 in. [300 to 1500 mm] Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Based on installation requirements, these fittings may be more or less expensive than existing systems.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P139-21 AS

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Mod_11078_Text_P139-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P11079		/P140-21 Part I			
Date Submitted	03/14/2024	**Section**	1102.5	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements of ASTM F405

Rationale

See attached

P11079Text Modification

See attached

Page: 1

Mod11079_TextOfModification.pdf

P11079Text Modification

P140-21 Part I

Original Proposal

IPC: TABLE 1102.5

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 1102.5 SUBSOIL DRAIN PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F405; ASTM F667; CSA B182.1; CSA B182.6; CSA B182.8

Reason: ASTM F405 was withdrawn by ASTM. The content of F405 for the most part is contained in ASTM F667, which is already referenced in Table 1102.5, and is proposed for addition to IRC Tables P3009.11 and P3302.1 (see proposal 7039).

Bibliography: ASTM F405 - Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings (Withdrawn 2015)
ASTM F667/F667M - Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The products specified in ASTM F405 were moved to ASTM F667. The impact to construction is neutral.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: ASTM F405 has been withdrawn from the standards review process. The code should not reference withdrawn standards. (14-0)

Final Hearing Results

P140-21 Part I AS

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Mod_11079_Text_P140-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

71

P11081 | **/P142-21**

Date Submitted	03/14/2024	**Section**	1102.4	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements for ASTM F2947/F2947M-20

Rationale

See attached

P11081Text Modification

See attached

Page: 1

Mod11081_TextOfModification.pdf

P11081Text Modification

P142-21

Original Proposal

IPC: TABLE 1102.4, TABLE 1102.7, ASTM Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 1102.4 BUILDING STORM SEWER PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F667; ASTM F2306/F2306M; ASTM F2648/F2648M;ASTM F2947

TABLE 1102.7 PIPE FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; ASTM F2947/F2947M

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F2947/F2947M-20 Standard Specification for 150 to 1500 mm [6 to 60 in.] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

Reason: ASTM F2947/F2947 is proposed for addition to Table 1102.4 - BUILDING STORM SEWER PIPE because it is a annular corrugated high performing sanitary sewer pipe made from recycled material with a variable pipe stiffness based on diameter. This product normally is used for sanitary sewer applications, but is being proposed for storm drainage systems for communities who want enhanced hydraulics, corrosion resistant, improved stiffness, and high performing joints. ASTM F2947/F2947M is also being proposed for addition to Table 1102.7 because fittings are also called out in the standard.

Bibliography: ASTM F2947/F2947M - Standard Specification for 150 to 1500 mm [6 to 60 in] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Sanitary Sewer Applications

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Based on how the product is installed and what the other allowable materials are, ASTM F2947/F2947M may have a higher or lower installed cost.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Page: 1

Mod_11081_Text_P142-21.pdf

P11081Text Modification

Final Hearing Results

P142-21 AS

Mod_11081_Text_P142-21.pdf Page: 2

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P11082		/P143-21 Part I			
Date Submitted	03/14/2024	**Section**	1102.7	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements of ASTM F667/F667M

Rationale

See attached

P11082Text Modification

See attached

Page: 1

Mod11082_TextOfModification.pdf

P11082Text Modification

P143-21 Part I

Original Proposal

IPC: TABLE 1102.7

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Plumbing Code

Revise as follows:

TABLE 1102.7 PIPE FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F2306/F2306M; ASTM F667/F667M

Reason: ASTM F667/F667M covers pipe and fittings. The proposal to add this standard to Table 1102.7 - Pipe Fittings is just to highlight that the pipe standard listed on Table 1102.4 and 1102.5 covers fittings as well as pipe. It is also appropriate to add ASTM F667/F667M to the IRC Table P3302.1 - Subsoil Drain Pipe and Table P3009.1 - Distribution Pipe since ASTM F405 is listed in these standards as well, and ASTM F667/F667M is a replacement for ASTM F405.

Bibliography: ASTM F667/F667M - Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The addition of ASTM F667/F667M to Table 1102.7, Table P3302.1, and Table P3009.11 doesn't impact construction cost. It simply highlights that the standard covers pipe and fittings.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P143-21 Part I AS

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Mod_11082_Text_P143-21 Part I.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P11084		/P144-21			
Date Submitted	03/14/2024	**Section**	1102.7	**Proponent**	Mo Madani
Chapter	11	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard requirements for ASTM F3202-19a

Rationale

See attached

P11084Text Modification

See attached

Page: 1

Mod11084_TextOfModification.pdf

P11084Text Modification

P144-21

Original Proposal

IPC: TABLE 1102.7, ASTM Chapter 15 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (Shawn.coombs@ads-pipe.com)

2021 International Plumbing Code

Revise as follows:

TABLE 1102.7 PIPE FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyvinyl chloride (PVC) plastic	ASTM D2665; ASTM D3311; ASTM F1866; ASTM F3202

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959

F3202-19a Standard Specification for Solid Wall Poly (Vinyl Chloride) PVC Fittings for Joining Corrugated Wall High Density Polyethylene (PE) and Propylene (PP) Piping

Reason: ASTM F3202 is proposed for addition to Table 1102.7 - PIPE FITTINGS because the fittings are used when connecting to structures and when higher quality connections (fittings) are desired for Polyethylene (PP) and Polypropylene (PP) Pipe. It is a relatively new standard that was created in 2019.

Bibliography: ASTM F3202 - Standard Specification for Solid Wall Poly (Vinyl Chloride) PVC Fittings for Joining Corrugated Wall High Density Polyethylene (PE) and Polypropylene (PP) piping.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Based on installation requirements these fittings may be less or more expensive than Polypropylene (PP) or Polyethylene (PE) fittings.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (14-0)

Final Hearing Results

P144-21 AS

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Mod_11084_Text_P144-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Plumbing

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P10830		/G1-21 Part IV			
Date Submitted	03/07/2024	**Section**	1302.9	**Proponent**	Mo Madani
Chapter	13	**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

Changes language from "easily accessible" to easy access

Rationale

See attached

P10830Text Modification

See attached

Page: 1

Mod10830_TextOfModification.pdf

P10830Text Modification

G1-21 Part IV

Original Proposal

PART IV - IPC: 1302.9; IBC: [P]1210.2.2; ICCPC: [P]1204.3.3

Proponents: Mike Nugent, Chair, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org); Michael O'Brian, Chair, FCAC (fcac@iccsafe.org); Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Plumbing Code

Revise as follows:

1302.9 Pumping and control system. Mechanical equipment including pumps, valves and filters shall be ~~easily accessible~~ have easy access and removable in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section 604 .

Reason: This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 . Because the term 'accessible' is most commonly understood as requiring access for persons with disabilities we are making the changes to delete the word accessible from the remaining codes and replace it with other words, defined terms or phrases that are not attributed to requiring access for the physically disabled. Many of the codes use the defined term 'access (to)' or 'ready access (to)' for access by maintenance and service personnel or fire departments. This proposal provides clarity and consistency in the remaining codes where those coordination modifications missed or came in as part of new code changes.

Code change proposal M2-15 removed 'door' from the definitions for 'access (to)' and 'ready access (to)'. That coordination item did not happen across codes and this proposal seeks to complete that effort.

Similar proposals will be submitted for the Group B cycle for IRC, IECC and IEBC.

This proposal is submitted by the ICC Building Code Action Committee (BCAC), ICC Fire Code Action Committee (BCAC), and ICC Plumbing/Mechanical/Gas Code Action Committee (PMGCAC).
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 PMG CAC was established by the ICC Board of Directors in July 2011 to pursue opportunities to improve and enhance assigned

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Mod_10830_Text_G1-21 Part IV.pdf

International Codes or portions thereof. In 2020, the PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: PMGCAC.

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
There is no change to any of the requirements. This is only a clarification in terminology.

Public Hearing Results

Committee Action **Disapproved**

Committee Reason: Although the intent of the proposal is understood, including the word "easy" continues a poor code text practice. Either something has access (see defined term) or it doesn't. (14-0)

Public Comments

Public Comment 1

Proponents: Mike Nugent, ICC Building Code Action Committee, ICC Building Code Action Committee (bcac@iccsafe.org) requests As Modified by Public Comment

Modify as follows:

2021 International Plumbing Code

1302.9 Pumping and control system . Mechanical equipment including pumps, valves and filters shall~~be~~ have ~~easy~~ access and be removable in order to perform repair, maintenance and cleaning. The minimum flow rate and flow pressure delivered by the pumping system shall be appropriate for the application and in accordance with Section 604 .

Commenter's Reason: The Plumbing committee felt that this was an appropriate change, but did not like the word 'easy' in Section 1302.9 as this is not uniformly enforceable. The BCAC used the word only because the original language was 'easily accessible'. However, we agree with the committee and are proposing to delete that word. We ask the membership to approve this proposal with that revision. This effort was started by the CACs in 2015/16 code change cycle, and continued in 2018/19. This proposal is to provide coordination with the action taken with -P84-15, M2-15, RB2-16, F12-16, CE137-16 Part 1, CE29-19 Part 1 and 2 as well at G1-21 Parts 2, 3, 5 and 6.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction
This proposal continues the committee work to remove 'accessible' where the context is not about accessibility for persons with disabilities. The defined terms 'access to' and 'ready access' is used where appropriate. The modifications were to address concerns expressed during the testimony and expressed by the Egress committee.

Final Hearing Results

G1-21 Part IV AMPC1

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

75

P11622		/RP1-21			
Date Submitted	04/02/2024	**Section**	2503.5.2	**Proponent**	Mo Madani
Chapter	25	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Deletes and substitutes P2503.5.2 "Drainage and vent final test".

Rationale

See attached

P11622Text Modification

See attached

Page: 1

Mod11622_TextOfModification.pdf

P11622Text Modification

RP1-21

Original Proposal

IRC: P2503.5.2

Proponents: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C., Self (JBENGINEER@aol.com)

2021 International Residential Code

Delete and substitute as follows:

~~**P2503.5.2 Finished plumbing.** After the plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proved gastight or watertight as follows:~~

~~1. Watertightness. Each fixture shall be filled and then drained. Traps and fixture connections shall be proven watertight by visual inspection.~~

~~2. Gastightness. Where required by the local administrative authority, a final test for gastightness of the DWV system shall be made by the smoke or peppermint test as follows:~~

~~2.1. Smoke test. Introduce a pungent, thick smoke into the system. When the smoke appears at vent terminals, such terminals shall be sealed and a pressure equivalent to a 1-inch water column (249 Pa) shall be applied and maintained for a test period of not less than 15 minutes.~~

~~2.2. Peppermint test. Introduce 2 ounces (59 mL) of oil of peppermint into the system. Add 10 quarts (9464 mL) of hot water and seal the vent terminals. The odor of peppermint shall not be detected at any trap or other point in the system.~~

P2503.5.2 Drainage and vent final test. The final test of the drainage and vent system shall be visual to determine compliance with the provisions of this code. Each fixture shall be filled and then drained. Traps and fixture connections shall be proven watertight.

Reason: The testing for water and gas tightness of the drainage and vent piping system occurs during the rough-in test when the system is filled with water or air. Thus, there is no reason for testing the piping system again during the final test. The only inspection during final is of the fixture after being set. This is done by visually inspecting the installation and operating the fixture. Any improper connection is obvious during this inspection.

Peppermint testing should have never been introduced into the Residential Code. The International Plumbing Code has never had peppermint testing. The legacy plumbing codes and Uniform Plumbing Code removed the allowance of a peppermint test dating back to the 1980's. Peppermint testing is an archaic test that is completely ineffective for testing plumbing systems. Smoke testing of a residential building's drainage and vent system is unnecessary for a final inspection. If the International Plumbing Code doesn't require smoke testing in commercial buildings, the Residential Code surely should not be mandating such a test.

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

By removing the requirement for a smoke test, this change will lower the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: No one on the Committee can remember anyone performing a peppermint test for many years. It is unreliable to depend on a person's sense of smell to determine if there is a leak. (11-1)

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Mod_11622_Text_RP01-21.pdf

P11622Text Modification

Final Hearing Results

RP1-21 AS

Mod_11622_Text_RP01-21.pdf Page: 2

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

76

P10887	/P6-21 Part II				
Date Submitted	03/08/2024	**Section**	2603.2.1	**Proponent**	Mo Madani
Chapter	26	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds language for P2603.2.1.1 Shield plates

Rationale

See attached

1st Comment Period History

P10887-G1

Proponent Gary Kozan Submitted 5/28/2024 12:59:33 PM Attachments No

Comment:

I am opposed to this Residential Code change for the same reason as its Plumbing Code counterpart P10886. It accomplishes absolutely nothing. It "cuts" shield plate language from section P2603.2.1, and then "pastes" it into a new subsection 2603.2.1.1. How many "sub-sub-sub-sections" is enough? And the proponent's reason statement offers no explanation.

P10887Text Modification

See attached

Mod10887_TextOfModification.pdf

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P10887Text Modification

P6-21 Part II

Original Proposal

IRC: P2603.2.1.1 (New), P2603.2.1, M1308.2.1, M1308.2.2

Proponents: Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Residential Code

Add new text as follows:

P2603.2.1.1 Shield plates. Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).

P2603.2.1 Protection against physical damage. In concealed locations, where piping, other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1 1/4 inches (31.8 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 Gage). Such plates shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 2 inches (51 mm) above sole plates and below top plates.

Revise as follows:

M1308.2.1 Piping through bored holes or notches. Where *piping* is installed through holes or notches in framing members and is located less than ~~1 1/2 inches (38 mm)~~ 1 1/4 inches (32 mm) from the framing member face to which wall, ceiling or floor membranes will be attached, the pipe shall be protected by shield plates that cover the width of the pipe and the framing member and that extend 2 inches (51 mm) to each side of the framing member. Where the framing member that the piping passes through is a bottom plate, bottom track, top plate or top track, the shield plates shall cover the framing member and extend 2 inches (51 mm) above the bottom framing member and 2 inches (51 mm) below the top framing member.

M1308.2.2 Piping in other locations. Where piping is located within a framing member and is less than ~~1 1/2 inches (38 mm)~~ 1 1/4 inches (32 mm) from the framing member face to which wall, ceiling or floor membranes will be attached, the piping shall be protected by shield plates that cover the width and length of the piping. Where piping is located outside of a framing member and is located less than 1 1/2 inches (38 mm) from the nearest edge of the face of the framing member to which the membrane will be attached, the piping shall be protected by shield plates that cover the width and length of the piping.

Reason: The safest place to install piping is in the middle of the wall. But in a typical 3-1/2 inch stud wall, even a 1/2-inch pipe (5/8-inch OD) ends up slightly nearer than the requisite 1-1/2 inch setback from either edge. Depending on enforcement, installers are often required to put shield plates on both sides of the stud. This makes no sense. By simply reducing the setback from 1-1/2 inches to 1-1/4 inches, both 1/2-inch and 3/4-inch piping can be safely installed in the center of the wall without triggering the need for shield plates on both sides. This encourages quality workmanship instead of penalizing it. The pipes are still safely out of range of drywall screws up to 1-1/2 inches long. This proposal is consistent with the National Electrical Code, which specifies a 1-1/4 inch setback from the edge of a stud. It is also consistent with the IRC, which also specifies a 1-1/4 inch setback. Note that the Uniform Plumbing Code allows a 1-inch distance before a shield plate is required . This proposal will bring consistency to the I-Codes.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 12.

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Mod_10887_Text_P6-21 Part II.pdf

P10887Text Modification

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Reducing the distance from the face of the stud for where shield plates are required could result in*fewer* plates needed for a project. The need for fewer plates would reduce cost of construction but that cost reduction would be insignificant.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
P2603.2.1 Protection against physical damage.
In concealed locations, where piping, other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1
1/4 inches (31.8 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates.~~Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 Gage).~~ Such plates shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 2 inches (51 mm) above sole plates and below top plates.

Committee Reason: For the modification: This eliminates a redundancy in the proposal.
For the proposal as modified: This change is to provide consistency in all the codes. (10-1)

Final Hearing Results

P6-21 Part II AM

Page: 2

Mod_10887_Text_P6-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

77

P11352		/P6-21 Part II			
Date Submitted	03/25/2024	**Section**	2603	**Proponent**	Mo Madani
Chapter	26	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new section P2603.2.1.1 "Shield plates". Modifies text of M1308.2.1, M1308.2.2/

Rationale

See attached

P11352Text Modification

See attached

Page: 1

Mod11352_TextOfModification.pdf

P6-21 Part II

Original Proposal

IRC: P2603.2.1.1 (New), P2603.2.1, M1308.2.1, M1308.2.2

Proponents: Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)

2021 International Residential Code

Add new text as follows:

P2603.2.1.1 Shield plates. Shield plates shall be of steel material having a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 gage).

P2603.2.1 Protection against physical damage. In concealed locations, where piping, other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than $1^1/_4$ inches (31.8 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 Gage). Such plates shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 2 inches (51 mm) above sole plates and below top plates.

Revise as follows:

M1308.2.1 Piping through bored holes or notches. Where *piping* is installed through holes or notches in framing members and is located less than ~~$1^1/_2$ inches (38 mm)~~ 1 1/4 inches (32 mm) from the framing member face to which wall, ceiling or floor membranes will be attached, the pipe shall be protected by shield plates that cover the width of the pipe and the framing member and that extend 2 inches (51 mm) to each side of the framing member. Where the framing member that the piping passes through is a bottom plate, bottom track, top plate or top track, the shield plates shall cover the framing member and extend 2 inches (51 mm) above the bottom framing member and 2 inches (51 mm) below the top framing member.

M1308.2.2 Piping in other locations. Where piping is located within a framing member and is less than ~~1 1/2 inches (38 mm)~~ 1 1/4 inches (32 mm) from the framing member face to which wall, ceiling or floor membranes will be attached, the piping shall be protected by shield plates that cover the width and length of the piping. Where piping is located outside of a framing member and is located less than $1^1/_2$ inches (38 mm) from the nearest edge of the face of the framing member to which the membrane will be attached, the piping shall be protected by shield plates that cover the width and length of the piping.

Reason: The safest place to install piping is in the middle of the wall. But in a typical 3-1/2 inch stud wall, even a 1/2-inch pipe (5/8-inch OD) ends up slightly nearer than the requisite 1-1/2 inch setback from either edge. Depending on enforcement, installers are often required to put shield plates on both sides of the stud. This makes no sense. By simply reducing the setback from 1-1/2 inches to 1-1/4 inches, both 1/2-inch and 3/4-inch piping can be safely installed in the center of the wall without triggering the need for shield plates on both sides. This encourages quality workmanship instead of penalizing it. The pipes are still safely out of range of drywall screws up to 1-1/2 inches long. This proposal is consistent with the National Electrical Code, which specifies a 1-1/4 inch setback from the edge of a stud. It is also consistent with the IRC, which also specifies a 1-1/4 inch setback. Note that the Uniform Plumbing Code allows a 1-inch distance before a shield plate is required . This proposal will bring consistency to the I-Codes.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 12.

P11352Text Modification

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Reducing the distance from the face of the stud for where shield plates are required could result in *fewer* plates needed for a project. The need for fewer plates would reduce cost of construction but that cost reduction would be insignificant.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
P2603.2.1 Protection against physical damage.
In concealed locations, where piping, other than cast-iron or galvanized steel, is installed through holes or notches in studs, joists, rafters or similar members less than 1
1/4 inches (31.8 mm) from the nearest edge of the member, the pipe shall be protected by steel shield plates. ~~Such shield plates shall have a thickness of not less than 0.0575 inch (1.463 mm) (No. 16 Gage).~~ Such plates shall cover the area of the pipe where the member is notched or bored, and shall extend not less than 2 inches (51 mm) above sole plates and below top plates.

Committee Reason: For the modification: This eliminates a redundancy in the proposal.
For the proposal as modified: This change is to provide consistency in all the codes. (10-1)

Final Hearing Results

P6-21 Part II AM

Page: 2

Mod_11352_Text_P06-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

78

P11623		/RP3-21			
Date Submitted	04/02/2024	**Section**	2704.1	**Proponent**	Mo Madani
Chapter	27	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

The 2015-2017 PMGCAC successfully changed IRC Section P2704.1 concerning the location of slip joints. However, an error was made at the PMGCAC level that was not noticed by anyone until the 2018 IRC was published.

Rationale

See attached

P11623Text Modification

See attached

Page: 1

Mod11623_TextOfModification.pdf

P11623Text Modification

RP3-21

Original Proposal

IRC: P2704.1

Proponents: Joeseph J. Summers, Chair of the PMGCAC, Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2021 International Residential Code

Revise as follows:

P2704.1 Slip joints. Slip-joint connections shall be installed only for tubular waste piping and only between the waste ~~trap~~ outlet of a fixture and the connection to the drainage piping. Slip-joint connections shall be made with an *approved* elastomeric sealing gasket. Slip-joint connections shall be accessible. Such access shall provide an opening that is not less than 12 inches (305 mm) in its smallest dimension.

Reason: The 2015-2017 PMGCAC successfully changed IRC Section P2704.1 concerning the location of slip joints. However, an error was made at the PMGCAC level that was not noticed by anyone until the 2018 IRC was published. This could not be corrected as Errata as the code reflects exactly how the approved proposal was written.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC 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 PMG CAC has held several virtual meetings open to any interested party. Numerous interested parties attended the committee meetings and offered their input. Related documentation and reports are posted on the PMG CAC website at: https://www.iccsafe.org/products-and-services/i-codes/code-development-process/pmg-code-action-committee-pmgcac/ Reference PMGCAC Working Document Item 24.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal only clarifies the code. Clarifications of existing requirements do not change material or labor costs and therefore, do not impact the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

RP3-21 AS

Page: 1

Mod_11623_Text_RP03-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

79

P11624		/RP4-21			
Date Submitted	04/02/2024	**Section**	2709.3	**Proponent**	Mo Madani
Chapter	27	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

A simple pointer to help the user locate the necessary information that goes hand in hand with the requirements for building a shower receptor.

Rationale

See attached

P11624Text Modification

See attached

Page: 1

Mod11624_TextOfModification.pdf

P11624Text Modification

RP4-21

Original Proposal

IRC: P2709.3

Proponents: Guy McMann, Jefferson County Govt., Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2021 International Residential Code

Revise as follows:

P2709.3 Installation. Lining materials shall be sloped $^{1}/_{4}$ unit vertical in 12 units horizontal (2-percent slope) to weep holes in the subdrain by means of a smooth, solidly formed subbase, shall be properly recessed and fastened to *approved* backing so as not to occupy the space required for the wall covering, and shall not be nailed or perforated at any point less than 1 inch (25.4 mm) above the finished threshold. The assembly shall be tested in accordance with Section P2503.6

Reason: A simple pointer to help the user locate the necessary information that goes hand in hand with the requirements for building a shower receptor.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is editorinal in nature and will not increase the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

RP4-21 AS

Page: 1

Mod_11624_Text_RP04-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

80

P11625		/RP5-21			
Date Submitted	04/02/2024	**Section**	2717.2	**Proponent**	Mo Madani
Chapter	27	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

An editorial cleanup of Section P2717.2.

Rationale

See attached

P11625Text Modification

See attached

Page: 1

Mod11625_TextOfModification.pdf

P11625Text Modification

RP5-21

Original Proposal

IRC: P2717.2

Proponents: Guy McMann, Jefferson County Govt., Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2021 International Residential Code

Revise as follows:

P2717.2 ~~Sink and dishwasher.~~ Dishwasher waste connection. ~~The combined discharge from a dishwasher and a one- or two-compartment sink, with or without a food-waste disposer, shall be served by a trap of not less than 1½ inches (38 mm) in outside diameter. The dishwasher discharge pipe or tubing shall rise to the underside of the counter and be fastened or otherwise held in that position before connecting to the head of the food-waste disposer or to a wye fitting in the sink tailpiece.~~The waste connection of a dishwasher shall connect directly to a wye branch fitting on the tailpiece of the kitchen sink, directly to the dishwasher connection of a food waste disposer, or through an air break to a standpipe. The waste line of the dishwasher shall rise and be securely fastened to the underside of the sink rim or countertop and to the top of the standpipe.

Reason: This is basically an editorial cleanup. The language in the IPC is straight forward and to the point. The language about trap size is redundant as it's covered by Table P3201.7. It is important that the waste connection be firmly fastened to the top of the standpipe due to it being a pumped waste.

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

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
P2717.2 Dishwasher waste connection.
The waste connection of a dishwasher shall connect directly to a wye branch fitting on the tailpiece of the kitchen sink, directly to the dishwasher connection of a food waste disposer, or through an air break to a standpipe. The waste line of the dishwasher shall rise and be securely fastened to the underside of the sink rim or countertop~~ and to the top of the standpipe~~.Where a waste line drains into a standpipe, the waste line shall be securely fastened to the top of the standpipe.

Committee Reason: For the modification: This clears up some confusion to make sure that there are only one of three ways to make this connection.
For the proposal as modified: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

RP5-21 AM

Page: 1

Mod_11625_Text_RP05-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

81

P10945		/P54-21 Part II			
Date Submitted	03/08/2024	**Section**	2801.9	**Proponent**	Mo Madani
Chapter	28	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Residential Code language for lead volume in water heaters

Rationale

See attached

P10945Text Modification

See attached

Page: 1

Mod10945_TextOfModification.pdf

P10945Text Modification

P54-21 Part II

Original Proposal

IRC: P2801.9 (New)

Proponents: Jeremy Brown, NSF International, NSF International (brown@nsf.org)

THIS IS A 2 PART PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-P&M COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THESE COMMITTEES.

2021 International Residential Code

Add new text as follows:

P2801.9 Lead Content. Water heaters shall comply with NSF 372 and shall have a weighted average lead content of 0.25% or less.

Reason: Section P2906.2.1 was created to implement lead content requirements of the US Safe Drinking Water Act (SDWA) and requires NSF 372. In September 2020, the EPA finalized its final rule for interpreting the Safe Drinking Water Act. The final rule did change scope of products affected by the lead content requirements and cited water heaters as fixtures used for potable water according the final rule. See SDWA definition below:
"Fixture means a receptacle or device that is connected to a water supply system or discharges to a drainage system or both. Fixtures used for potable uses shall include but are not limited to: (1) Drinking water coolers, drinking water fountains, drinking water bottle fillers, dishwashers; (2) Plumbed in devices, such as point-of-use treatment devices, coffee makers, and refrigerator ice and water dispensers; and (3) Water heaters, water meters, water pumps, and water tanks, unless such fixtures are not used for potable uses."

Final rule is found at https://www.federalregister.gov/documents/2020/09/01/2020-16869/use-of-lead-free-pipes-fittings-fixturessolderand- flux-for-drinking-water Water heaters are singled out for proposed code sections because they are not consistently interpreted as intended to convey or dispense drinking water. As such they need a specific code section to require lead content to be consistent with the SDWA. I have submitted this code change as well as a similar one to give the committee options for how this could be approved.

NSF/ANSI/CAN 372 is the American and Canadian National Standards for determining lead content of drinking water system components.

Bibliography: NSF/ANSI/CAN 372-2020 Drinking Water System Components-Lead Content

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The SDWA already mandates that water heaters be third party certified and lead free so this proposal does not increase the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The final rules from the USEPA concerning the reduced lead level for components in drinking water systems states that a water heater does supply drinking water as the water could be used for drinking, especially from a lavatory faucet. (11-0)

Final Hearing Results

P54-21 Part II AS

Page: 1

Mod_10945_Text_P54-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

82

P11626		/RP6-21			
Date Submitted	04/02/2024	**Section**	2801.1	**Proponent**	Mo Madani
Chapter	28	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Deletes Section P2801.1 "Required".

Rationale

See attached

P11626Text Modification

See attached

Page: 1

Mod11626_TextOfModification.pdf

P11626Text Modification

RP6-21

Original Proposal

IRC: P2801.1

Proponents: Glenn Mathewson, BuildingCodeCollege.com, Self (glenn@glennmathewson.com)

2021 International Residential Code

Revise as follows:

~~**P2801.1 Required.** *Hot water* shall be supplied to plumbing fixtures and plumbing *appliances* intended for bathing, washing or culinary purposes.~~

Reason: This is the only provision in Chapter 28 that is not related to the installation of water heating equipment. That's because it doesn't belong in Chapter 28 and is already covered in Section R306.4. 306.4 references various fixtures that require hot water. P2801.1, however, specifies human activities directly, such as "bathing, washing, and culinary purposes", as opposed to fixtures. This is an unnecessary complication, redundancy, and potential conflict within the single IRC. A "pot filler" over a range is for "culinary purposes"and a hose bib is used for "washing" cars, but these fixtures are not listed in R306.4, because they don't require hot water. R306.4 is all that is needed to scope where hot water is required.
Here is some history on these two provisions that will reveal this is baggage from the collaboration of multiple code organizations, and we should feel comfortable in cleaning it up for 2024.

The provision P2801.1 first appeared in the 1986 CABO dwelling code, section 2408.1 and was ironically one of only two provisions in the "water heater" section 2408. This would later become it's own chapter in the 1995 edition (Chapter 33). It stated the same phrase "bathing, washing, or culinary purposes". In this same 1986 code, section 207 (the equivalent to 306.4 today) already required hot wall for ALL fixtures, except for water closets. A redundancy and potential conflict was born, but where did it come from?

I'm not sure why it was first added to the CABO in 1986, because the phrase "bathing, washing, culinary purposes" comes from the BOCA Basic Plumbing Code P-1606.1 as far back as 1975. (the limit to my research access).

Section 207 in the CABO code required hot and cold water to all fixtures, except water closets, since the first 1971 edition. This would have likely come from one of the building official organizations involved. To discover which it was, I looked to see which of the legacy building codes carried it forward in their own code, after the 1971 CABO.

Nothing in the 1975 BOCA about fixtures and hot water. Nothing in the 1975 SBCCI dwelling house pamphlet. Nothing in the 1973 UBC dwelling house construction code. So... where did it come from? Well, many forget the fourth legacy code in the original CABO code, from the American Insurance Association (AIA).

In the 1967 National Building Code, by AIA, section 1401.2 required hot water to the kitchen sink (a specific fixture). In the 1975 edition of this same code, Section 607.2(a) we find the start of the list of fixtures we see today in 2021 IRC Section 306.4 (lavatory, bathtub, shower...)

So, it turns out that the insurance industry was the first to require hot water to specific fixtures (in a building code) and is the origin to Section R306.4. It was only complicated with additional provisions from the BOCA plumbing code in 1986, and looks pretty much the same today.

Let's respect this history and the compromises made to create a single residential code in the 70's, but let's also move on from nearly 40 years of conflicting redundancy. One provision is all that is necessary and that's R306.4

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There is no anticipated change in average construction costs associated with this proposal.

Page: 1

Mod_11626_Text_RP06-21.pdf

P11626Text Modification

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee couldn't figure out why this text was originally included in Chapter 28 (about water heaters) as the hot water requirement is already in Chapter 3. Removing this from Chapter 28 makes sense to avoid any future conflicts. (11-0)

Final Hearing Results

RP6-21 AS

Page: 2

Mod_11626_Text_RP06-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

83

P11627	/RP7-21				
Date Submitted	04/02/2024	**Section**	2801.6.3	**Proponent**	Mo Madani
Chapter	28	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments Yes

Related Modifications

Summary of Modification

Adds new Section P2801.6.3 "Appliance, equipment and insulation in pans".

Rationale

See attached

1st Comment Period History

P11627-G1

Proponent Gary Kozan Submitted 6/3/2024 11:39:41 AM Attachments Yes

Comment:

I do not agree with this proposal, and including it in the water heater chapter would result in a wide range of interpretations in the field. This provision already exists in the Condensate Disposal Section of the Plumbing Code (314.2.3.2), the Condensate Disposal Section of the Mechanical Code (307.2.3.2) and the Condensate Disposal Section of the Residential Code (M1411.3.1.2). According to the IPC Commentary, its stated purpose is to provide protection for mechanical equipment subject to intermittent condensate overflow conditions. This provision was never intended to apply to water heaters. I have not found any water heater manufacturer installation instructions which require heaters located within drain pans to be elevated above the flood level rim of the pan. A water heater bottom exposed to wet conditions does not damage the product or hinder its performance. In fact, the most likely cause of water in a pan is a leaking tank that needs to be replaced anyway. I urge the TAC to disapprove this mod, along with its companion change #10947 in the Plumbing Code.

P11627Text Modification

See attached

Page: 1

Mod11627_TextOfModification.pdf

P11627Text Modification

RP7-21

Original Proposal

IRC: P2801.6.3 (New)

Proponents: Guy McMann, Jefferson County Govt., Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2021 International Residential Code

Add new text as follows:

P2801.6.3 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill, such portions of the appliance, equipment and insulation shall be installed above the flood level rim of the pan. Supports located inside the pan to support the appliance or equipment shall be water resistant and approved.

Reason: It's important that the IRC be consistent with the IPC, IMC and IFGC. This language is the same found in the IPC and will provide more consistent enforcement.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
These requirements already exist and will not increase the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This same requirement is already in the mechanical and gas sections of the IRC. This section applies to water heaters. The IPC has the same requirement. (6-5)

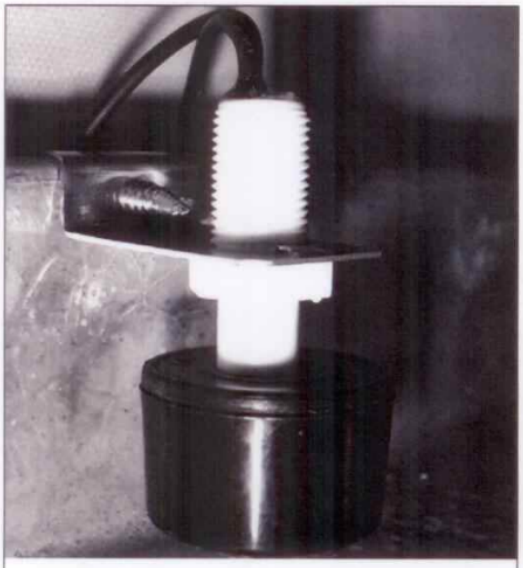
Final Hearing Results

RP7-21 AS

Page: 1

Mod_11627_Text_RP07-21.pdf

The exception is for fuel-fired appliances having integral controls to prevent operation of the appliance if condensate is not draining. The standards for some appliances, such as gas-fired furnaces, will permit either of two performance modes for an appliance with a failed condensate drainage system: 1) the appliance will shut down or 2) the appliance will continue to operate, provided that such operation does not in any way present a hazard.



Commentary Figure 314.2.3(3)
PRIMARY OR AUXILIARY DRAIN PAN FLOAT SWITCH
(Photo courtesy of SMD Research, Inc.)

[M] 314.2.3.1 Water-level monitoring devices. On downflow units and all other coils that do not have a secondary drain or provisions to install a secondary or auxiliary drain pan, a water-level monitoring device shall be installed inside the primary drain pan. This device shall shut off the equipment served in the event that the primary drain becomes restricted. Devices installed in the drain line shall not be permitted.

❖ Some appliances (downflow type) and coil arrangements cannot be fitted with a secondary drain or installed with an auxiliary drain pan. This is particularly true for the typical rooftop HVAC unit where drain pan overflow could damage ducts and duct insulation. An internal water monitoring device must be used in these situations so that the device shuts off the unit prior to overflow of the primary drain pan. If the device was installed external to the appliance, a drain blockage in or near the appliance might occur upstream of the device, thereby rendering it useless.

[M] 314.2.3.2 Appliance, equipment and insulation in pans. Where appliances, equipment or insulation are subject to water damage when auxiliary drain pans fill such portions of the appliances, equipment and insulation shall be installed above the *flood level rim* of the pan. Supports located inside of the pan to support the appliance or equipment shall be water resistant and *approved*.

❖ If a condensate overflow situation occurs, appliances sitting directly on the bottom of the pan will be exposed to the condensate water, even though the pan may have a working drain. Most appliances are not suitable for constantly damp or intermittent wet environments. Sheet metal enclosures will quickly rust under these conditions. Exterior and interior insulation will be degraded by the water, providing ideal conditions for mold growth in concealed locations. This section requires that any such appliance be elevated above the flood rim level of the pan below so that the appliance is not directly exposed to wet conditions. The code is silent on what type of material is to be used for support other than requiring it to be water resistant and approved by the code official (see Commentary Figure 314.2.3.2).

Commentary Figure 314.2.3.2
FURNACE ELEVATED ABOVE TOP OF CONDENSATE PAN

[M] 314.2.4 Traps. Condensate drains shall be trapped as required by the equipment or appliance manufacturer.

❖ The appliance or equipment manufacturer determines the need for a trap and often specifies its depth and configuration. The traps addressed in this section are unrelated to plumbing traps and serve a different purpose. Condensate drain traps do not directly connect in any way to the plumbing DWV system of a building. Condensate drain traps are installed to prevent air from being pushed or pulled through the drain piping. Such airflow can impede condensate flow, causing overflow or abnormal water depth in drain pans. Some

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

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P10965		/P62-21 Part II			
Date Submitted	03/08/2024	**Section**	2906.5	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing language to Residential

Rationale

See attached

P10965Text Modification

See attached

Page: 1

Mod10965_TextOfModification.pdf

P10965Text Modification

P62-21 Part II

Original Proposal

IRC: TABLE P2906.5, ASTM Chapter 44 (New)

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us)

2021 International Residential Code

Revise as follows:

TABLE P2906.5 WATER DISTRIBUTION PIPE

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic pipe and tubing	ASTM D2846; ASTM F441; ASTM F442/F442M; CSA B137.6
Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC) plastic pipe	ASTM F2855
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, WK, L, WL, M or WM)	ASTM B75/B75M; ASTM B88; ASTM B251; ASTM B447
Cross-linked polyethylene (PEX) plastic tubing	ASTM F876; CSA B137.5
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pipe	ASTM F1281; ASTM F2262; CSA B137.10
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE) pipe	ASTM F1986
Galvanized steel pipe	ASTM A53
Polyethylene/aluminum/polyethylene (PE-AL-PE) composite pipe	ASTM F1282
Polyethylene of raised temperature (PE-RT) plastic tubing	ASTM F2769; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel (Type 304/304L) tubing	ASTM A269; ASTM A312; ASTM A554; ASTM A778
Stainless steel (Type 316/316L) tubing	ASTM A269; ASTM A312; ASTM A554; ASTM A778

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing

Reason: Stainless steel material as indicated in the IPC is proposed to be added for applications where stainless steel pipe, tubing and fittings are necessary for corrosion resistance and also aligns with IPC. Add ASTM A269 and A554 which are equivalent to those standards included as additional standard options for product listing.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Adding an additional standard option for stainless steel pipe to be listed to will not increase or decrease the cost of construction. If anything, it has potential to decrease the cost since this increases the number of suppliers of pipe and tubing that can be purchased.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

TABLE P2906.5 WATER DISTRIBUTION PIPE	
Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ~~ASTM A554;~~ ASTM A778
Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ~~ASTM A554;~~ ASTM A778
Stainless steel (Type 304/304L) tubing	ASTM A269; ASTM A312; ~~ASTM A554;~~ ASTM A778
Stainless steel (Type 316/316L) tubing	ASTM A269; ASTM A312; ~~ASTM A554;~~ ASTM A778

Page: 1

Mod_10965_Text_P62-21 Part II.pdf

P10965Text Modification

Committee Reason: For the modification: The standard is not appropriate for water distribution piping material.
For the proposal as modified: This proposal adds another option for water distribution piping. (11-0)

Final Hearing Results

P62-21 Part II AM

Page: 2

Mod_10965_Text_P62-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

85

P10971		/P63-21 Part II			
Date Submitted	03/11/2024	**Section**	2906.6	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds ASTM reference standard A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing to Residential Code

Rationale

See attached

P10971Text Modification

See attached

Page: 1

Mod10971_TextOfModification.pdf

P10971Text Modification

P63-21 Part II

Original Proposal

IRC: TABLE P2906.6, ASTM Chapter 44 (New)

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us)

2021 International Residential Code

Revise as follows:

TABLE P2906.6 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; CSA B137.5
Gray iron and ductile iron	AWWA C110/A21.10; AWWA C153/A21.53
Malleable iron	ASME B16.3
Insert fittings for Polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Polyethylene (PE) plastic	ASTM D2609; CSA B137.1
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F3226
Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ASTM A554; ASTM A778; ASTM F3226
Steel	ASME B16.9; ASME B16.11; ASME B16.28; ASTM F3226

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

A554-16 Standard Specification for Welded Stainless Steel Mechanical Tubing

Reason: ASTM A269 and A554 are proposed Stainless Steel standards that are included in other nationally recognized codes and are commonly used in potable water applications. ASTM F3226 *Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems,* includes Steel and Stainless steel alloy, is currently included for copper and copper alloy in this table, and should be added to the others to increase the options for materials to be used in water supply fitting installations.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
ASTM A269, A554, and F3226 are additional optional standards to which press-connect fittings can be constructed and/or listed to. By providing the additional proposed standards, fittings made from these materials offer additional options for the specifier and/or installer with no additional cost impact as they are optional and not mandatory standard requirements.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:

TABLE P2906.6 PIPE FITTINGS	

Page: 1

Mod_10971_Text_P63-21 Part II.pdf

P10971Text Modification

Stainless steel (Type 304/304L) pipe	ASTM A269; ASTM A312; ~~ASTM A554;~~ ASTM A778; ASTM F3226
Stainless steel (Type 316/316L) pipe	ASTM A269; ASTM A312; ~~ASTM A554;~~ ASTM A778; ASTM F3226

Committee Reason: For the modification: The standard is not appropriate for water distribution piping material.
For the proposal as modified: This adds another option for water distribution piping. (11-0)

Final Hearing Results

P63-21 Part II AM

Page: 2

Mod_10971_Text_P63-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

86

P10975		/P65-21 Part II			
Date Submitted	03/11/2024	**Section**	2096.6	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds reference standard ASTM F3348-20b to the Residential

Rationale

See attached

P10975Text Modification

See attached

Page: 1

Mod10975_TextOfModification.pdf

P10975Text Modification

P65-21 Part II

Original Proposal

IRC: TABLE P2906.6, ASTM Chapter 44 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

2021 International Residential Code

Revise as follows:

TABLE P2906.6 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3348; CSA B137.5
Gray iron and ductile iron	AWWA C110/A21.10; AWWA C153/A21.53
Malleable iron	ASME B16.3
Insert fittings for Polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Polyethylene (PE) plastic	ASTM D2609; CSA B137.1
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3348; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L) pipe	ASTM A312; ASTM A778
Stainless steel (Type 316/316L) pipe	ASTM A312; ASTM A778
Steel	ASME B16.9; ASME B16.11; ASME B16.28

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

F3348-20b — Standard Specification for Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Reason: ASTM F3348 is titled, "Standard Specification for Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing" and contains information on plastic fittings for PEX and PERT systems and should be included in the fittings table. The fittings are intended for use in residential and commercial, hot and cold, potable water distribution systems as well as sealed central heating, including under-floor heating/cooling systems, and residential fire sprinkler systems.

Bibliography: ASTM F3348 Standard Specification for Plastic Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal adds a standard for PEX and PERT fittings and is not expected to increase or decrease the costs of construction.

Public Hearing Results

Page: 1

Mod_10975_Text_P65-21 Part II.pdf

P10975Text Modification

Committee Action **As Submitted**

Committee Reason: This adds another option for piping material. (11-0)

Final Hearing Results

P65-21 Part II AS

Page: 2

Mod_10975_Text_P65-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

87

P10978		/P68-21 Part II			
Date Submitted	03/11/2024	**Section**	2903.9.4	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Add referenced standard for stainless steel ball valves

Rationale

See attached

P10978Text Modification

See attached

Page: 1

Mod10978_TextOfModification.pdf

P10978Text Modification

P68-21 Part II

Original Proposal

IRC: TABLE P2903.9.4, IAPMO Chapter 44 (New)

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us)

2021 International Residential Code

Revise as follows:

TABLE P2903.9.4 VALVES

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASTM F1970, CSA B125.3, MSS SP-122
Copper or copper alloy	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASME B16.34, CSA B125.3, IAPMO Z1157, MSS SP-67, MSS SP-80, MSS SP-110, MSS SP-139
Gray and ductile iron	ASTM A126, AWWA C500, AWWA C504, AWWA C507, MSS SP-42, MSS SP-67, MSS SP-70, MSS SP-71, MSS SP-72, MSS SP-78
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14, ASME A112.18.1/CSA B125.1, CSA B125.3, IAPMO Z1157, NSF 359
Polypropylene (PP) plastic	ASME A112.4.14, ASTM F2389
Polyvinyl chloride (PVC) plastic	ASME A112.4.14, ASTM F1970, MSS SP-122
Stainless Steel	IAPMO Z1157

Add new standard(s) as follows:

IAPMO

IAPMO Group
4755 E. Philadelphia Street
Ontario, CA 91761-USA

Z1157-2014e1 Ball Valves

Reason: The proposed IAPMO Z1157 ANSI accredited standard covers ball valves NPS-1/8 to NPS-4, with minimum rated working pressures of 125psi at 73°F, intended for use in water supply and distribution systems, and specifies requirements for materials, physical characteristics, performance, testing, and markings. The proposed standard is currently referenced in other nationally recognized codes such as the IPC and will provide the user the opportunity to choose additional valves listed to this standard for these applications. Stainless steel material is proposed to be added for applications where stainless steel pipe, tubing and fittings are necessary for corrosion resistance. The proposed stainless steel standards are also referenced in other nationally recognized codes and are commonly used for potable water distribution and hydronic applications.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The addition of this standard into the IRC does not increase or decrease the cost of construction, but allows for an additional option for selecting valves that are listed for use in these applications. The inclusion of this standard does not mandate the use of an IAPMO Z1157 listed ball valve, it provides it as an option. Adding Stainless Steel as an option does not impact the cost but provides an additional material option for the specifier and/or installer.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Public Comments

Page: 1

Mod_10978_Text_P68-21 Part II.pdf

P10978Text Modification

Public Comment 1

Proponents: Lisa Reiheld, Viega LLC, Viega LLC (lisa.reiheld@viega.us) requests As Modified by Public Comment

Modify as follows:

2021 International Residential Code

TABLE P2903.9.4 VALVES

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC) plastic	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASTM F1970, CSA B125.3, MSS SP-122
Copper or copper alloy	ASME A112.4.14, ASME A112.18.1/CSA B125.1, ASME B16.34, CSA B125.3, IAPMO Z1157, MSS SP-67, MSS SP-80, MSS SP-110, MSS SP-139
Gray and ductile iron	ASTM A126, AWWA C500, AWWA C504, AWWA C507, MSS SP-42, MSS SP-67, MSS SP-70, MSS SP-71, MSS SP-72, MSS SP-78
Cross-linked polyethylene (PEX) plastic	ASME A112.4.14, ASME A112.18.1/CSA B125.1, CSA B125.3, IAPMO Z1157, NSF 359
Polypropylene (PP) plastic	ASME A112.4.14, ASTM F2389
Polyvinyl chloride (PVC) plastic	ASME A112.4.14, ASTM F1970, MSS SP-122
Stainless Steel	IAPMO Z1157, ASME A112.4.14

Commenter's Reason: Add ASME A112.4.14 *Manually Operated Valves for Use in Plumbing Systems*, to Stainless Steel in this table as the standard covers valves in stainless steel as well as other materials already covered by ASME A112.4.14 in this table.

Cost Impact: The net effect of the Public Comment and code change proposal will not increase or decrease the cost of construction Adding this standard already included in this table for other materials does not increase or decrease the cost.

Final Hearing Results

P68-21 Part II AMPC1

Page: 2

Mod_10978_Text_P68-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

88

P10980		/P74-21 Part II			
Date Submitted	03/11/2024	**Section**	2906.9.1.2	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Add reference standards and language regarding cement joints

Rationale

See attached

P10980Text Modification

See attached

Page: 1

Mod10980_TextOfModification.pdf

P10980Text Modification

P74-21 Part II

Original Proposal

IRC: P2906.9.1.2, P2906.9.1.3, ASTM Chapter 44 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

2021 International Residential Code

Revise as follows:

P2906.9.1.2 CPVC plastic pipe. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer's installation instructions.
Solvent cement joints shall be permitted above or below ground.
Where such instructions require a primer to be used, an*approved* primer shall be applied, and a solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. The joint shall be made while the cement is wet, and in accordance with ASTM D2855.
Where such instructions allow for a one-step solvent cement, yellow or red in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet, and in accordance with ~~ASTM D2846 or ASTM F493~~. ASTM F3328
~~Solvent cement joints shall be permitted above or below ground~~.

P2906.9.1.3 CPVC/AL/CPVC pipe. Joint surfaces shall be clean and free from moisture, and an*approved* primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and in accordance with ~~ASTM D2846 or ASTM F493~~ ASTM D2855. Solvent-cemented joints shall be installed above or below ground.

Exception: A primer shall not be required where all of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM F493.
2. The solvent cement used is yellow in color.
3. The solvent cement is used only for joining $^1/_2$-inch (12.7 mm) through 1-inch (25 mm) diameter CPVC/AL/CPVC pipe and CPVC fittings.
4. The CPVC fittings are manufactured in accordance with ASTM D2846.
5. The joint is made in accordance with ASTM F3328.

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

D2855-20	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
F3328-19	Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly(Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Public Hearing Results

Committee Action **As Submitted**

Page: 1

Mod_10980_Text_P74-21 Part II.pdf

P10980Text Modification

Committee Reason: This adds an option to use a one step cement for PVC and provides a standard for assembling these types of joints. (7-4)

Final Hearing Results

P74-21 Part II AS

Page: 2

Mod_10980_Text_P74-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

89

P10983		/P76-21 Part II			
Date Submitted	03/11/2024	**Section**	2906.9.1.3	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds ASTM reference standard for cement joints to Residential

Rationale

See attached

P10983Text Modification

See attached

Page: 1

Mod10983_TextOfModification.pdf

P10983Text Modification

P76-21 Part II

Original Proposal

IRC: P2906.9.1.3, ASTM Chapter 44 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

2021 International Residential Code

Revise as follows:

P2906.9.1.3 CPVC/AL/CPVC pipe. Joint surfaces shall be clean and free from moisture, and an *approved* primer shall be applied. Solvent cement, orange in color and conforming to ASTM F493, shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and in accordance with ~~ASTM D2846 or ASTM F493~~ASTM D2855. Solvent-cemented joints shall be installed above or below ground.

Exception: A primer shall not be required where all of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM F493.
2. The solvent cement used is yellow in color.
3. The solvent cement is used only for joining $^{1}/_{2}$-inch (12.7 mm) through 1-inch (25 mm) diameter CPVC/AL/CPVC pipe and CPVC fittings.
4. The CPVC fittings are manufactured in accordance with ASTM D2846.
5. The joint is made in accordance with ASTM F3328.

Add new standard(s) as follows:

ASTM

ASTM
International 100 Barr Harbor Drive,
P.O. Box C700 West Conshohocken,
PA 19428

D2855-20	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
F3328-19	Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This provides more updated standards for assembling solvent weld joints. (9-2)

Final Hearing Results

P76-21 Part II AS

Page: 1

Mod_10983_Text_P76-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

90

P11343		/F75-21 Part II			
Date Submitted	03/25/2024	**Section**	2904.1	**Proponent**	Mo Madani
Chapter	29	**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.

Summary of Modification

Proposal correlates several of the I codes to use the defined term of automatic sprinkler system.

Rationale

See attached

P11343Text Modification

See attached

Page: 1

Mod11343_TextOfModification.pdf

P11343Text Modification

F75-21 Part II

Original Proposal

IRC: P2904.1, P2904.3.4, P2904.4.2, P2904.7, P2904.8.1

Proponents: Andrew Bevis, National Fire Sprinkler Association, National Fire Sprinkler Association (bevis@nfsa.org); Jeffrey Hugo, National Fire Sprinkler Association, NFSA (hugo@nfsa.org)

2021 International Residential Code

Revise as follows:

P2904.1 General. The design and installation of ~~residential~~ automatic fire sprinkler systems shall be in accordance with NFPA 13D or Section P2904, which shall be considered to be equivalent to NFPA 13D. Partial ~~residential~~ automatic sprinkler systems shall be permitted to be installed only in buildings not required to be equipped with a ~~residential~~ automatic sprinkler system. Section P2904 shall apply to stand-alone and multipurpose wet-pipe sprinkler systems that do not include the use of antifreeze. A multipurpose ~~fire~~ automatic sprinkler system shall provide domestic water to both fire sprinklers and plumbing fixtures. A stand-alone automatic sprinkler system shall be separate and independent from the water distribution system. A backflow preventer shall not be required to separate an automatic sprinkler system from the water distribution system, provided that the sprinkler system complies with all of the following:

1. The system complies with NFPA 13D or Section P2904.
2. The piping material complies with Section P2906.
3. The system does not contain antifreeze.
4. The system does not have a fire department connection.

P2904.3.4 Drain. A means to drain the automatic sprinkler system shall be provided on the system side of the water distribution shutoff valve.

P2904.4.2 System design flow rate. The design flow rate for the system shall be based on the following:

1. The design flow rate for a room having only one sprinkler shall be the flow rate required for that sprinkler, as determined by Section P2904.4.1.
2. The design flow rate for a room having two or more sprinklers shall be determined by identifying the sprinkler in that room with the highest required flow rate, based on Section P2904.4.1, and multiplying that flow rate by 2.
3. Where the sprinkler manufacturer specifies different criteria for ceiling configurations that are not smooth, flat and horizontal, the required flow rate for that room shall comply with the sprinkler manufacturer's instructions.
4. The design flow rate for the automatic sprinkler system shall be the flow required by the room with the largest flow rate, based on Items 1, 2 and 3.
5. For the purpose of this section, it shall be permissible to reduce the design flow rate for a room by subdividing the space into two or more rooms, where each room is evaluated separately with respect to the required design flow rate. Each room shall be bounded by walls and a ceiling. Openings in walls shall have a lintel not less than 8 inches (203 mm) in depth and each lintel shall form a solid barrier between the ceiling and the top of the opening.

P2904.7 Instructions and signs. An owner's manual for the ~~fire~~ automatic sprinkler system shall be provided to the *owner*. A sign or valve tag shall be installed at the main shutoff valve to the water distribution system stating, "Warning, the water system for this home supplies fire sprinklers that require certain flows and pressures to fight a fire. Devices that restrict the flow or decrease the pressure or automatically shut off the water to the fire sprinkler system, such as water softeners, filtration systems and automatic shutoff valves, shall not be added to this system without a review of the fire sprinkler system by a fire protection specialist. Do not remove this sign."

P11343Text Modification

P2904.8.1 Preconcealment inspection. The following items shall be verified prior to the concealment of any automatic sprinkler system piping:

1. Sprinklers are installed in all areas as required by Section P2904.1.1.
2. Where sprinkler water spray patterns are obstructed by construction features, luminaires or ceiling fans, additional sprinklers are installed as required by Section P2904.2.4.2.
3. Sprinklers are the correct temperature rating and are installed at or beyond the required separation distances from heat sources as required by Sections P2904.2.1 and P2904.2.2.
4. The pipe size equals or exceeds the size used in applying Tables P2904.6.2(4) through P2904.6.2(9) or, if the piping system was hydraulically calculated in accordance with Section P2904.6.1, the size used in the hydraulic calculation.
5. The pipe length does not exceed the length permitted by Tables P2904.6.2(4) through P2904.6.2(9) or, if the piping system was hydraulically calculated in accordance with Section P2904.6.1, pipe lengths and fittings do not exceed those used in the hydraulic calculation.
6. Nonmetallic piping that conveys water to sprinklers is *listed* for use with fire sprinklers.
7. Piping is supported in accordance with the pipe manufacturer's and sprinkler manufacturer's installation instructions.
8. The piping system is tested in accordance with Section P2503.7.

Reason: Across the I codes there are varying ways to describe an automatic sprinkler system. his proposal correlates several of the I codes to use the defined term of automatic sprinkler system. This allows for a better understanding of the term and application. Other proposals have been submitted to make several sprinkler and fire protection correlations and improvements.
Each section noted in this proposal has been changed to clarify what type of system is installed. In many cases, it is a simple deletion of the word "fire" or an added "automatic" and changes are to refer to the italicized term of automatic sprinkler system as is defined.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There are no technical changes in this proposal. It is for term correlation.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This is is a necessary editorial revision being accomplished across all of the codes to standardize terminology. (11-0)

Final Hearing Results

F75-21 Part II AS

Page: 2

Mod_11343_Text_F75-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

91

P11350		/M99-21 Part II			
Date Submitted	03/25/2024	**Section**	2906.6	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new reference standard ASTM F3347 "Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Rationale

See attached

P11350Text Modification

See attached

Page: 1

Mod11350_TextOfModification.pdf

M99-21 Part II

Original Proposal

IRC: TABLE P2906.6, TABLE M2101.1, ASTM Chapter 44 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

2021 International Residential Code

Revise as follows:

TABLE P2906.6 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5
Gray iron and ductile iron	AWWA C110/A21.10; AWWA C153/A21.53
Malleable iron	ASME B16.3
Insert fittings for Polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Polyethylene (PE) plastic	ASTM D2609; CSA B137.1
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L) pipe	ASTM A312; ASTM A778
Stainless steel (Type 316/316L) pipe	ASTM A312; ASTM A778
Steel	ASME B16.9; ASME B16.11; ASME B16.28

TABLE M2101.1 HYDRONIC PIPING AND FITTING MATERIALS

MATERIAL	USE CODE[a]	STANDARD[b]	JOINTS	NOTES
Acrylonitrile butadiene styrene (ABS) plastic pipe	1, 5	ASTM D1527, ASTM F2806, ASTM F2969	Solvent cement joints	—
Chlorinated poly (vinyl chloride) (CPVC) pipe and tubing	1, 2, 3	ASTM D2846	Solvent cement joints, compression joints and threaded adapters	—
Copper and copper-alloy pipe	1	ASTM B42, ASTM B43, ASTM B302	Brazed, soldered and mechanical fittings threaded, welded and flanged	—
Copper and copper-alloy tubing (Type K, L or M)	1, 2	ASME B16.51, ASTM B75, ASTM B88, ASTM B135, ASTM B251, ASTM B306	Brazed, soldered, press-connected and flared mechanical fittings	Joints embedded in concrete shall be brazed
Cross-linked polyethylene (PEX)	1, 2, 3	ASTM F876; ASTM F3253	(See PEX fittings)	Install in accordance with manufacturer's instructions
Cross-linked polyethylene/ aluminum/cross-linked polyethylene (PEX-AL-PEX) pressure pipe	1, 2	ASTM F1281 or CAN/CSA B137.10	Mechanical, crimp/insert	Install in accordance with manufacturer's instructions
PEX fittings	—	ASTM F877, ASTM F1807, ASTM F1960, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F3253; ASTM F3347	Copper crimp/insert fittings, cold expansion fittings, stainless steel clamp, insert fittings	Install in accordance with manufacturer's instructions
Polybutylene (PB) pipe and tubing	1, 2, 3	ASTM D3309	Heat-fusion, crimp/insert and compression	Joints in concrete shall be heat-fused
Polyethylene/aluminum/polyethylene (PE-AL-PE) pressure pipe	1, 2, 3	ASTM F1282, CSA B137.9	Mechanical, crimp/insert	—
Polypropylene (PP)	1, 2, 3	ISO 15874, ASTM F2389	Heat-fusion joints, mechanical fittings, threaded adapters, compression joints	—
Raised temperature polyethylene (PE-RT)	1, 2, 3	ASTM F2623, ASTM F2769, CSA B137.18	Copper crimp/insert fitting, stainless steel clamp, insert fittings	—
Raised temperature polyethylene (PE-RT) fittings	1, 2, 3	ASTM D3261, ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, ASTM F3347; CSA B137.18	Copper crimp/insert fitting, stainless steel clamp, insert fittings	—
Steel pipe	1, 2	ASTM A53, ASTM A106	Brazed, welded, threaded, flanged and mechanical fittings	Joints in concrete shall be welded. Galvanized pipe shall not be welded or brazed.
Steel tubing	1	ASTM A254	Mechanical fittings, welded	—

For SI: °C = [(°F) - 32]/1.8.

P11350Text Modification

a. Use code:

1. Above ground.
2. Embedded in radiant systems.
3. Temperatures below 180°F only.
4. Low temperature (below 130°F) applications only.
5. Temperatures below 160°F only.

b. Standards as listed in Chapter 44.

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

ASTM F3347	Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Reason: ASTM F3347 is titled, "Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing and contains information for metallic fittings for both PEX and PERT systems intended for use in residential and commercial, hot and cold, potable water distribution systems as well as sealed central heating, including under-floor heating/cooling systems, and residential fire sprinkler systems.

Bibliography: ASTM F3347, Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal adds a standard for PEX and PERT fittings and is not expected to increase or decrease the costs of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This new standard provides another option for hydronic piping. (11-0)

Final Hearing Results

M99-21 Part II AS

Page: 2

Mod_11350_Text_M99-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

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P11356		/P64-21 Part II			
Date Submitted	03/25/2024	**Section**	2906.6	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Table P2906.6. ASTM F3347 is titled, "Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing.

Rationale

See attached

P11356Text Modification

See attached

Page: 1

Mod11356_TextOfModification.pdf

P64-21 Part II

Original Proposal

IRC: TABLE P2906.6, ASTM Chapter 44 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

2021 International Residential Code

Revise as follows:

TABLE P2906.6 PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic	ASTM D2468
Cast iron	ASME B16.4
Chlorinated polyvinyl chloride (CPVC) plastic	ASSE 1061; ASTM D2846; ASTM F437; ASTM F438; ASTM F439; CSA B137.6
Copper or copper alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.26; ASME B16.51; ASSE 1061; ASTM F3226
Cross-linked polyethylene/aluminum/high-density polyethylene (PEX-AL-HDPE)	ASTM F1986
Fittings for cross-linked polyethylene (PEX) plastic tubing	ASSE 1061; ASTM F877; ASTM F1807; ASTM F1960; ASTM F2080; ASTM F2098; ASTM F2159; ASTM F2434; ASTM F2735; ASTM F3347; CSA B137.5
Gray iron and ductile iron	AWWA C110/A21.10; AWWA C153/A21.53
Malleable iron	ASME B16.3
Insert fittings for Polyethylene/aluminum/polyethylene (PE-AL-PE) and cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX)	ASTM F1281; ASTM F1282; ASTM F1974; CSA B137.9; CSA B137.10
Polyethylene (PE) plastic	ASTM D2609; CSA B137.1
Fittings for polyethylene of raised temperature (PE-RT) plastic tubing	ASSE 1061; ASTM D2683; ASTM D3261; ASTM F1055; ASTM F1807; ASTM F2098; ASTM F2159; ASTM F2735; ASTM F2769; ASTM F3347; CSA B137.18
Polypropylene (PP) plastic pipe or tubing	ASTM F2389; CSA B137.11
Polyvinyl chloride (PVC) plastic	ASTM D2464; ASTM D2466; ASTM D2467; CSA B137.2; CSA B137.3
Stainless steel (Type 304/304L) pipe	ASTM A312; ASTM A778
Stainless steel (Type 316/316L) pipe	ASTM A312; ASTM A778
Steel	ASME B16.9; ASME B16.11; ASME B16.28

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

F3347-20a — Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Reason: ASTM F3347 is titled, "Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing and contains information for metallic fittings for both PEX and PERT systems intended for use in residential and commercial, hot and cold, potable water distribution systems as well as sealed central heating, including under-floor heating/cooling systems, and residential fire sprinkler systems.

Bibliography: ASTM F3347, Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal adds a standard for PEX and PERT fittings and is not expected to increase or decrease the costs of construction.

Public Hearing Results

Committee Action **As Submitted**

P11356Text Modification

Committee Reason: This adds another option for piping material. (11-0)

Final Hearing Results

P64-21 Part II AS

Page: 2

Mod_11356_Text_P64-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

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P11360		/P75-21 Part II			
Date Submitted	03/25/2024	**Section**	2906.9.1.2	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review				
Commission Action	Pending Review			Staff Classification	Correlates Directly

Comments

General Comments No

Related Modifications

Summary of Modification

Currently, it can be difficult to see the yellow solvent cement ring on a tan CTS CPVC joint during inspection.

Rationale

See attached

P11360Text Modification

See attached

Page: 1

Mod11360_TextOfModification.pdf

P11360Text Modification

P75-21 Part II

Original Proposal

IRC: P2906.9.1.2

Proponents: Forest Hampton, Lubrizol, Inc., Lubrizol, Inc. (forest.hampton@lubrizol.com)

2021 International Residential Code

Revise as follows:

P2906.9.1.2 CPVC plastic pipe. Joint surfaces shall be clean and free from moisture. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer's installation instructions. Where such instructions require a primer to be used, an *approved* primer shall be applied, and a solvent cement, orange in color and conforming to ASTM F493, shall be applied to joint surfaces. Where such instructions allow for a one-step solvent cement, yellow, green, or red in color and conforming to ASTM F493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet, and in accordance with ASTM D2846 or ASTM F493. Solvent cement joints shall be permitted above or below ground.

Reason: Currently, it can be difficult to see the yellow solvent cement ring on a tan CTS CPVC joint during inspection. A high contrast cement has been asked for from the field to aid in the inspection of CPVC joints. The color green was chosen because of its high contrast against the tan pipe and fittings and green is not currently used to identify any other type of cement.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The addition of another one-step solvent cement color will not change the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

P75-21 Part II AS

Page: 1

Mod_11360_Text_P75-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

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P11628	/RP8-21				
Date Submitted	04/02/2024	**Section**	2903.6	**Proponent**	Mo Madani
Chapter	29	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds new Section P2903.6 "Existing piping used for grounding".

Rationale

See attached

P11628Text Modification

See attached

Page: 1

Mod11628_TextOfModification.pdf

P11628Text Modification

RP8-21

Original Proposal

IRC: P2903.6 (New)

Proponents: Guy McMann, Jefferson County Govt., Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2021 International Residential Code

Add new text as follows:

P2903.6 Existing piping used for grounding. Existing metallic water service piping used for electrical grounding shall not be replaced with non-metallic pipe or tubing until other approved means of grounding is provided.

Reason: The replacement of a portion of that metal piping system with non-metallic piping could interrupt the continuity of the electrical grounding system thereby creating a potentially hazardous situation. This language is already in the IPC Section 601.3 and needs to be in the IRC as it would apply to one and two-family units as well and will bring consistency to the two codes.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
These requirement already exist and will not increase the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This is a known issue that continues to create an electrical safety hazard. This requirement is already in the IPC. (11-0)

Final Hearing Results

RP8-21 AS

Page: 1

Mod_11628_Text_RP08-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

95

P11024		/P117-21 Part II			
Date Submitted	03/13/2024	**Section**	3003.9.2	**Proponent**	Mo Madani
Chapter	30	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Summary of Modification

Adds requirements for reference standard ASTM F3328

Rationale

See attached

P11024Text Modification

See attached

Page: 1

Mod11024_TextOfModification.pdf

P11024Text Modification

P117-21 Part II

Original Proposal

IRC: P3003.9.2, ASTM Chapter 44 (New)

Proponents: Michael Cudahy, PPFA, PPFA (mikec@cmservices.com)

2021 International Residential Code

Revise as follows:

P3003.9.2 Solvent cementing. Joint surfaces shall be clean and free from moisture. A purple primer, or other *approved* primer, that conforms to ASTM F656 shall be applied. Solvent cement not purple in color and conforming to ASTM D2564, CSA B137.3 or CSA B181.2 shall be applied to all joint surfaces. The joint shall be made while the cement is wet, and shall be in accordance with ASTM D2855. Solvent-cement joints shall be installed above or below ground.

Exception: A primer shall not be required where all of the following conditions apply:

1. The solvent cement used is third-party certified as conforming to ASTM D2564.
2. The solvent cement is used only for joining PVC drain, waste and vent pipe and fittings in nonpressure applications in sizes up to and including 4 inches (102 mm) in diameter
3. The joint is made in accordance with ASTM F3328.

Add new standard(s) as follows:

ASTM

ASTM
International 100 Barr Harbor Drive,
P.O. Box C700 West Conshohocken,
PA 19428

F3328-19	Standard Practice for the One-Step (Solvent Cement Only) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: These instructions are necessary to properly make the joint. (6-5)

Final Hearing Results

P117-21 Part II AS

Page: 1

Mod_11024_Text_P117-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

96

P11026		/P120-21 Part II			
Date Submitted	03/13/2024	**Section**	3002.1	**Proponent**	Mo Madani
Chapter	30	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

FBC -R - Section P3003.12.1.

Summary of Modification

Adds ASTM F3371-19 reference standard requirements

Rationale

See attached

P11026Text Modification

See attached

Page: 1

Mod11026_TextOfModification.pdf

P120-21 Part II

Original Proposal

IRC: TABLE P3002.1(1), TABLE P3002.1(2), TABLE P3002.2, P3003.11.1, ASTM Chapter 44 (New)

Proponents: William Chapin, Professional Code Consulting, LLC, Professional Code Consulting, LLC (bill@profcc.us)

2021 International Residential Code

Revise as follows:

TABLE P3002.1(1) ABOVE-GROUND DRAINAGE AND VENT PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; ASTM D2680; ASTM F628; ASTM F1488; CSA B181.1
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Copper or copper-alloy pipe	ASTM B42; ASTM B43; ASTM B302
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75/B75M; ASTM B88; ASTM B251/B251M; ASTM B306
Galvanized steel pipe	ASTM A53/A53M
Polyolefin pipe	ASTM F3371; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2665; ASTM F891; ASTM F1488; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949; ASTM F1488
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1

For SI: 1 inch = 25.4 mm.

TABLE P3002.1(2) UNDERGROUND BUILDING DRAINAGE AND VENT PIPE

PIPE	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; ASTM F628; ASTM F1488; CSA B181.1
Cast-iron pipe	ASTM A74; ASTM A888;CISPI 301
Copper or copper-alloy tubing (Type K, L, M or DWV)	ASTM B75/B75M; ASTM B88; ASTM B251; ASTM B306
Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F714
Polyolefin pipe	ASTM F714; ASTM F1412;ASTM F3371; CSA B181.3
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2665; ASTM F891; ASTM F1488; CSA B181.2
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949; ASTM F1488
Stainless steel drainage systems, Type 316L	ASME A112.3.1

For SI: 1 inch = 25.4 mm.

TABLE P3002.2 BUILDING SEWER PIPE

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with a solid, cellular core or composite wall	ASTM D2661; ASTM F628; ASTM F1488
Acrylonitrile butadiene styrene (ABS) plastic pipe in sewer and drain diameters, including SDR 42 (PS 20), PS35, SDR 35 (PS 45), PS50, PS100, PS140, SDR 23.5 (PS 150) and PS200; with a solid, cellular core or composite wall	ASTM D2751; ASTM F1488
Polyvinyl chloride (PVC) plastic pipe in sewer and drain diameters, including PS 25, SDR 41 (PS 28), PS 35, SDR 35 (PS 46), PS 50, PS 100, SDR 26 (PS 115), PS140 and PS 200; with a solid, cellular core or composite wall	ASTM D3034; ASTM F891; ASTM F1488; CSA B182.2; CSA B182.4
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Concrete pipe	ASTM C14; ASTM C76; CSA 8–93; CSA A257.2
Copper or copper-alloy tubing (Type K or L)	ASTM B75/B75M; ASTM B88; ASTM B251/B251M
Polyethylene (PE) plastic pipe (SDR-PR)	ASTM F714
Polyolefin pipe	ASTM F1412; ASTM F3371;CSA B181.3
Polyvinyl chloride (PVC) plastic pipe in IPS diameters, including schedule 40, DR 22 (PS 200) and DR 24 (PS 140); with solid, cellular core or composite wall	ASTM D2665; ASTM D2949; ASTM D3034; ASTM F1412; CSA B182.2; CSA B182.4
Polyvinyl chloride (PVC) plastic pipe with a 3.25-inch O.D. and a solid, cellular core or composite wall	ASTM D2949, ASTM F1488
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C425; ASTM C700

P11026Text Modification

For SI: 1 inch = 25.4 mm.

P3003.11.1 Heat-fusion joints. Heat-fusion joints for polyolefin pipe and tubing joints shall be installed with socket-type heat-fused polyolefin fittings or electrofusion polyolefin fittings. Joint surfaces shall be clean and free from moisture. The joint shall be undisturbed until cool. Joints shall be made in accordance with ASTM F1412, ASTM F3371, or CSA B181.3.

Add new standard(s) as follows:

ASTM ASTM International 100 Barr Harbor Drive, P.O. Box C700 West Conshohocken, PA 19428

F3371-19 Standard Specification for Polyolefin Pipe and Fittings for Drainage, Waste, and Vent Applications

Reason: ASTM F1412 for corrosive waste is currently being used for typical DWV applications. There is no restriction within F1412 to not allow this and still should be referenced, but it is overly restrictive for manufacturer to make polyolefin pipe/fittings for typical DWV applications to have to go to the extreme of a chemical resistance test in F1412 if the product was not to be used for corrosive waste. For this reason, ASTM F3371 was developed and published as it includes the same requirements as F1412 minus the chemical resistance testing. Also note that other ASTM standards for DWV application do not include a chemical resistance test.

Bibliography: ASTM F3371-19 Standard Specification for Polyolefin Pipe and Fittings for Drainage, Waste, and Vent Applications

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal adds another option for piping, Options in the code tend to decrease the cost of construction.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: This adds another option for piping material for these applications. (11-0)

Final Hearing Results

P120-21 Part II AS

Page: 2

Mod_11026_Text_P120-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

97

P11080		/P140-221 Part II			
Date Submitted	03/14/2024	**Section**	3009.11	**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

Section 3009 of the FBC - R is marked reserved.

Summary of Modification

Adds reference standard requirements of ASTM F405

Rationale

See attached

P11080Text Modification

See attached

Page: 1

Mod11080_TextOfModification.pdf

P11080Text Modification

P140-21 Part II

Original Proposal

IRC: TABLE P3009.11, TABLE P3302.1

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (shawn.coombs@ads-pipe.com)

2021 International Residential Code

Revise as follows:

TABLE P3009.11 DISTRIBUTION PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F405

TABLE P3302.1 SUBSOIL DRAIN PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F405; CSA B182.1; CSA B182.6; CSA B182.8

Reason: ASTM F405 was withdrawn by ASTM. The content of F405 for the most part is contained in ASTM F667, which is already referenced in Table 1102.5, and is proposed for addition to IRC Tables P3009.11 and P3302.1 (see proposal 7039).

Bibliography: ASTM F405 - Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings (Withdrawn 2015)
ASTM F667/F667M - Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings

Cost Impact: The products specified in ASTM F405 were moved to ASTM F667. The impact to construction is neutral.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

P140-21 Part II AS

Page: 1

Mod_11080_Text_P140-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

98

P11364		/P140-21 Part II			
Date Submitted	03/25/2024	**Section**	3009	**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

Section 3009 is marked reserved in the 2023 FBC - R.

Summary of Modification

Adds new standard Table 3009.11, Table P3302.1.

Rationale

See attached

P11364Text Modification

See attached

Page: 1

Mod11364_TextOfModification.pdf

P11364Text Modification

P140-21 Part II

Original Proposal

IRC: TABLE P3009.11, TABLE P3302.1

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (shawn.coombs@ads-pipe.com)

2021 International Residential Code

Revise as follows:

TABLE P3009.11 DISTRIBUTION PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F405

TABLE P3302.1 SUBSOIL DRAIN PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F405; CSA B182.1; CSA B182.6; CSA B182.8

Reason: ASTM F405 was withdrawn by ASTM. The content of F405 for the most part is contained in ASTM F667, which is already referenced in Table 1102.5, and is proposed for addition to IRC Tables P3009.11 and P3302.1 (see proposal 7039).

Bibliography: ASTM F405 - Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings (Withdrawn 2015)
ASTM F667/F667M - Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings

Cost Impact: The products specified in ASTM F405 were moved to ASTM F667. The impact to construction is neutral.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

P140-21 Part II AS

Page: 1

Mod_11364_Text_P140-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

99

P11629		/RP11-21			
Date Submitted	04/02/2024	**Section**	3101.5	**Proponent**	Mo Madani
Chapter	31	**Affects HVHZ**	Yes	**Attachments**	Yes
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

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

P11629Text Modification

See attached

Page: 1

Mod11629_TextOfModification.pdf

P11629Text Modification

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 Zonesand 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

Page: 1

Mod_11629_Text_RP11-21.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

100

P11365		/P143-21 Part II			
Date Submitted	03/25/2024	**Section**	3302	**Proponent**	Mo Madani
Chapter	33	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Overlap
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

Section P3009 is marked revered in the 2023 FBC-R.

Summary of Modification

The proposal to add this standard to Table 1102.7 - Pipe Fittings is just to highlight that the pipe standard listed on Table 1102.4 and 1102.5 covers fittings as well as pipe.

Rationale

See attached

P11365Text Modification

See attached

Page: 1

Mod11365_TextOfModification.pdf

P11365Text Modification

P143-21 Part II

Original Proposal

IRC: TABLE P3302.1, TABLE P3009.11, ASTM Chapter 44 (New)

Proponents: Shawn Coombs, Advanced Drainage Systems, Inc., Advanced Drainage Systems, Inc. (shawn.coombs@ads-pipe.com)

2021 International Residential Code

Revise as follows:

TABLE P3302.1 SUBSOIL DRAIN PIPE

MATERIAL	STANDARD
Cast-iron pipe	ASTM A74; ASTM A888; CISPI 301
Polyethylene (PE) plastic pipe	ASTM F405; ASTM F667/F667M; CSA B182.1; CSA B182.6; CSA B182.8
Polyvinyl chloride (PVC) plastic pipe (type sewer pipe, SDR 35, PS25, PS50 or PS100)	ASTM D2729; ASTM D3034; ASTM F891; CSA B182.2; CSA B182.4
Stainless steel drainage systems, Type 316L	ASME A112.3.1
Vitrified clay pipe	ASTM C4; ASTM C700

TABLE P3009.11 DISTRIBUTION PIPE

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
Polyethylene (PE) plastic pipe	ASTM F405; ASTM F667/F667M

Add new standard(s) as follows:

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428

F667/F667M-16 Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings

Reason: ASTM F667/F667M covers pipe and fittings. The proposal to add this standard to Table 1102.7 - Pipe Fittings is just to highlight that the pipe standard listed on Table 1102.4 and 1102.5 covers fittings as well as pipe.

Bibliography: ASTM F667/F667M - Standard Specification for 3 through 24 in. Corrugated Polyethylene Pipe and Fittings

Cost Impact: The addition of ASTM F667/F667M to Table 1102.7 doesn't impact construction cost. It simply highlights that the standard covers pipe and fittings.

Public Hearing Results

Committee Action **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (11-0)

Final Hearing Results

P143-21 Part II AS

Page: 1

Mod_11365_Text_P143-21 Part II.pdf

TAC: Plumbing

Total Mods for **Plumbing** in **Pending Review : 101**

Total Mods for report: 101

Sub Code: Residential

P11085	/P147-21 Part II				101
Date Submitted	03/14/2024	**Section**	101	**Proponent**	Mo Madani
Chapter	3317	**Affects HVHZ**	Yes	**Attachments**	**Yes**
TAC Recommendation	Pending Review			Staff Classification	Correlates Directly
Commission Action	Pending Review				

Comments

General Comments No

Related Modifications

New appendix AX

Summary of Modification

Adds new appendix language regarding non-sewered sanitation systems

Rationale

See attached

P11085Text Modification

See attached

Page: 1

Mod11085_TextOfModification.pdf

P147-21 Part II

Original Proposal

IRC: APPENDIX AX (New), SECTION AX101 (New), AX101.1 (New), AX101.2 (New), SECTION AX102 (New), AX102.1 (New), SECTION AX103 (New), AX103.1 (New), AX103.2 (New), AX103.3 (New), AX103.4 (New), AX103.5 (New), AX103.6 (New), AX103.7 (New), SECTION AX104 (New), AX104.1 (New), AX105 (New), AX106.1 (New), TABLE AX106.1 (New)

Proponents: Edward R. Osann, Natural Resources Defense Council, Natural Resources Defense Council (eosann@nrdc.org); CJ Lagan, LIXIL, LIXIL (cj.lagan@lixil.com); albert rubin, NCSU, self (rubin@ncsu.edu)

2021 International Residential Code

Add new text as follows:

APPENDIX AX NON-SEWERED SANITATION SYSTEMS

SECTION AX101
GENERAL

AX101.1 Applicability. The provisions of this chapter shall apply to the installation of non-sewered sanitation systems.

AX101.2 System requirements. Non-sewered sanitation systems shall comply with ANSI/CAN/IAPMO/ISO 30500.

SECTION AX102
DEFINITIONS

AX102.1 General. For purposes of this chapter, the following definitions shall apply.
Conditioned Space. An area, room, or space normally occupied and being heated or cooled for human habitation by any equipment.

Non-Sewered Sanitation System. A prefabricated integrated sewage treatment unit that is not connected to a public sewer or private sewage disposal system.

SECTION AX103
INSTALLATION

AX103.1 General. The installation of non-sewered sanitation systems shall be in accordance with the manufacturer's installation instructions and with Section AX103.2 through AX103.7.

AX103.2 Operating conditions. A non-sewered sanitation system in either a conditioned or unconditioned space shall be installed where the ambient temperature, ambient humidity, and altitude (atmospheric pressure) are in accordance with the manufacturer's installation instructions or product listing.

AX103.3 Clearances for servicing and maintenance. A non-sewered sanitation system shall be located to permit access and sufficient clearance for service and maintenance. Unless otherwise specified by the manufacturer's installation instructions, not less than 30 inches in depth, width, and height of working space shall be provided at any access panel.

AX103.4 Backflow prevention. A domestic water supply connection to a non-sewered sanitation system shall be protected in accordance

with Section P2902 of this code.

AX103.5 Effluent storage. Any container or vessel for the storage of effluent discharged from a non-sewered sanitation system and not integral to such system shall be installed in accordance with Section P2910.9 of this code.

AX103.6 Systems employing combustion. A non-sewered sanitation system employing combustion shall comply with the mechanical code.
Exception: A non-sewered sanitation system listed for unvented use.

AX103.7 Connection to plumbing system not required. Unless the Authority Having Jurisdiction determines otherwise, a non-sewered sanitation system is not required to be connected to the sanitary drainage system of the building or premises.

SECTION AX104
MANUAL REQUIRED

AX104.1 Operation and maintenance manual. Non-sewered sanitation systems shall have an operation and maintenance manual provided by the manufacturer.

AX105 System output. The use or disposal of all substances exiting the non-sewered sanitation system shall be determined by the Authority Having Jurisdiction.

AX106.1 General. See Table AX106.1 for standards that are referenced in various sections of this appendix. Standards are listed by the standard identification with the effective date, the standard title, and the section or sections of this appendix that reference the standard.

TABLE AX106.1 REFERENCE STANDARDS

STANDARD ACRONYM	STANDARD NAME	SECTIONS HEREIN REFERENCED
ANSI/CAN/IAPMO/ISO 30500-2019	Non-sewered sanitation systems - Prefabricated integrated treatment units - General Safety and performance requirements for design and testing	AX101.2

Reason: This proposal covers the essential considerations that a building official must assess when a non-sewered sanitation system (NSSS) as defined herein is installed in a building. Designed for operation without a sewer connection and, in many cases, without a dedicated water supply, NSSSs are anticipated to meet critical public health needs in areas with limited water and wastewater infrastructure, water supply constraints, and/or unfavorable soils for traditional on-site disposal methods. In the U.S., over 20% of the population relies on an on-site wastewater system. And even today, a portion of our population does not have access to fully functioning sanitation, largely due to lack of affordable infrastructure or to challenging site conditions.
In 2011, the Bill & Melinda Gates Foundation launched the "Reinvent the Toilet Challenge" to bring new technology to bear to achieve sustainable sanitation solutions. The target is a factory-built device that provides complete and effective treatment of human sanitary waste, unconnected to any sewer or drainage network and with minimal inputs of energy and water. Eight teams received Foundation support to develop prototypes for lab testing, field trials, and commercialization. Among these initial devices, three broad pathways for treatment technology have emerged -- electro-chemical, biological, and combustion -- and in some cases, combinations of these in the same device. Manufacturers have been involved in these efforts, and LIXIL (owner of the American Standard brand) and other companies are working to develop compliant systems for both domestic and international installations. It is the general preference of manufacturers to design and market systems that are compliant with published codes and standards, rather than one-off compliance reviews by individual jurisdictions.

To facilitate commercialization of hi-tech toilets and their acceptance by state and national regulatory bodies, an ISO standard was adopted in 2018 to establish the key performance attributes of NSSSs. Standard 30500, *Non-sewered sanitation systems - Prefabricated integrated treatment units - General safety and performance requirements for design and testing*, sets performance requirements for solid and liquid

outputs, odor, noise, air emissions, materials, safety, marking, and ergonomics, together with relevant test procedures for measuring the attainment of these requirements. This ISO standard was adopted in identical form as a U.S. and Canadian national standard in 2019, designated as ANSI/CAN/IAPMO/ISO 30500:2019.

This proposal addresses the considerations that must be taken into account by building officials regarding the placement and installation of NSSSs in buildings. The proposal would permit (but not require) the installation of a NSSS listed to the ISO standard, and provide an exception to the general requirement in the code that sanitation devices be connected to the building drainage system, unless a connection is required by the AHJ. Certain key protections, such as backflow prevention, proper ventilation of combustion-based units, and proper siting of storage tanks (if any) external to the unit are each specified in the proposal. Considerations of the use and disposal of outputs of the system are specifically referred to an AHJ, which most likely will be a health department.

Criteria for the functioning of the unit for its intended purpose are established by the ISO standard and do not need to be repeated in plumbing code language. It should be noted that the ISO standard was developed by an international group of scientists, engineers, and regulators to assure the highest levels of treatment would apply to all outputs (air, water, and solids) from the device. The performance-based standards allow a variety of technologies to be applied, so long as key metrics are achieved. The microbiological reduction requirements for solid and liquid waste are based on the quantitative microbial risk assessment (QMRA) method recognized by the World Health Organization for this purpose. The requirements of the standard mimic the highest quality standards imposed by regulatory agencies on waste-derived materials destined for reuse. The standard's test procedures are rigorous (both lab and field tests are required), and the proposal allows only NSSSs listed to the standard to be approved for installation under this appendix.

With "Reinvented Toilets" meeting the 30500 standard now on the cusp of commercialization, the arrival of such toilets at job sites across the country can reasonably be expected by the time this code update is published and adopted by states and localities, e.g., 2025. Clear code language will accelerate the availability of safe sanitation for people who lack it today. While much is still unknown about the cost, maintenance, and reliability of NSSSs, or even the business model for their installation and servicing, forward-looking communities and jurisdictions with acute sanitation needs will want to be prepared for the safe installation and use of this promising new technology as it enters the market. This proposal lays out the necessary groundwork for code officials to inspect and approve their installation, set out in an appendix available for voluntary adoption by state and local code bodies.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal creates an appendix for voluntary adoption, and thus poses no additional costs on construction built to the base code. In jurisdictions where it is adopted, the proposal authorizes, but does not require, installation of a non-sewered sanitation device, as defined. Builders remain free to install less expensive sanitary ware if they so choose. First costs of an NSSD are expected to be higher than a conventional flush toilet, but may reduce sewer connection charges. NSSDs may also allow construction on sites that might otherwise be unbuildable due to lack of sewer infrastructure or site conditions unsuitable for conventional on-site systems.

Public Hearing Results

Committee Action **As Modified**

Committee Modification:
AX103.6 Systems employing combustion.
A non-sewered sanitation system employing combustion shall comply with the mechanical code.

~~**Exception:** A non-sewered sanitation system listed for unvented use~~.

AX103.7 Connection to plumbing system not required. ~~Unless the Authority Having Jurisdiction determines otherwise, a~~A non-sewered sanitation system is not required to be connected to the sanitary drainage system of the building or premises.

Committee Reason: For the modification: Some extraneous language needed removed and the exception was found to be in conflict with the mechanical and fuel gas sections of the code.
For the proposal as modified: This is a good addition to the appendix of the code as there are some remote areas where septic systems are

P11085Text Modification

not possible. The language provides guidance to the code official to be able to work with the local health authority for using this method. (11-0)

Final Hearing Results

P147-21 Part II AM