IPC

2018 GROUP A PUBLIC COMMENT AGENDA

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GREATER RICHMOND CONVENTION CENTER
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ICC
INTERNATIONAL CODE COUNCIL®

2018 Public Comment Agenda

First Printing

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P1-18 Part II

IRC: R202

Proposed Change as Submitted

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

2018 International Residential Code

Add new definition as follows

COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.

Reason:
It is important to understand that copper tube is an almost pure copper alloy, composed of 99.9% Cu + Ag combined with no greater than 0.04% P. Whereas, a copper alloy is a mixture of at least two metals in which copper is the primary component comprising no less than 50% and is combined with other elements to create different copper alloys. Therefore, brass, bronze, red brass, etc. are all forms of Copper Alloy.

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.

P1-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: No definitions for materials are in the code now, so this is unneeded text. (Vote: 7-0)

Assembly Action: **None**

P1-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie L Feehan, representing Copper Development Association (penniefeehan@me.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Residential Code

COPPER ALLOY. A ~~homogeneous mixture of not less than two metals where not less than 50% of the finished metal~~ metal alloy where the principal component is copper.

Commenter's Reason: This is a simpler definition which was approved in IPC.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This definition simply clarifies what is already required by the code and therefore, does not impact the cost of materials.

P1-18 Part II

P1-18 Part III

IMC: 202 (New)

Proposed Change as Submitted

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

2018 International Mechanical Code

Add new definition as follows

COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.

Reason:
It is important to understand that copper tube is an almost pure copper alloy, composed of 99.9% Cu + Ag combined with no greater than 0.04% P. Whereas, a copper alloy is a mixture of at least two metals in which copper is the primary component comprising no less than 50% and is combined with other elements to create different copper alloys. Therefore, brass, bronze, red brass, etc. are all forms of Copper Alloy.

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.

P1-18 Part III

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This is the only material definition for Chapter two and the code doesn't need definitions for every material addressed in the code. (Vote:11-0)

Assembly Action: **None**

P1-18 Part III

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie L Feehan, representing Copper Development Association (penniefeehan@me.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Mechanical Code

COPPER ALLOY. A ~~homogeneous mixture of not less than two metals where not less than 50% of the finished metal~~ metal alloy where the principal component is copper.

Commenter's Reason: This definition is similar to definitions found on the internet and was approved by the IPC.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This definition simply clarifies what is already required by the code and therefore, does not impact the cost of materials.

P1-18 Part III

P1-18 Part IV

IFGC: 202 (New)

Proposed Change as Submitted

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

2018 International Fuel Gas Code

Add new definition as follows

COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.

Reason: It is important to understand that copper tube is an almost pure copper alloy, composed of 99.9% Cu + Ag combined with no greater than 0.04% P. Whereas, a copper alloy is a mixture of at least two metals in which copper is the primary component comprising no less than 50% and is combined with other elements to create different copper alloys. Therefore, brass, bronze, red brass, etc. are all forms of Copper Alloy.

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.

P1-18 Part IV

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: Aligns with the ISPSC. Approval was based on the proponent's published reason statement. (Vote: 11-0)

Assembly Action: **None**

P1-18 Part IV

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie L Feehan, representing Copper Development Association (penniefeehan@me.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Fuel Gas Code

COPPER ALLOY. A ~~homogeneous mixture of not less than two metals where not less than 50% of the finished metal~~ metal alloy where the principal component is copper.

Commenter's Reason: This definition is similar to definitions found on the internet and was approved by the IPC.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This definition simply clarifies what is already required by the code and therefore, does not impact the cost of materials.

P1-18 Part IV

P1-18 Part V

ISPSC: 202 (New)

Proposed Change as Submitted

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

2018 International Swimming Pool and Spa Code

Add new definition as follows

COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.

Reason:
It is important to understand that copper tube is an almost pure copper alloy, composed of 99.9% Cu + Ag combined with no greater than 0.04% P. Whereas, a copper alloy is a mixture of at least two metals in which copper is the primary component comprising no less than 50% and is combined with other elements to create different copper alloys. Therefore, brass, bronze, red brass, etc. are all forms of Copper Alloy.

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.

P1-18 Part V

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: A copper alloy complying with this definition can be used in many locations. (Vote: 12-0)

Assembly Action: **None**

P1-18 Part V

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie L Feehan, representing Copper Development Association (penniefeehan@me.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Swimming Pool and Spa Code

COPPER ALLOY. A ~~homogeneous mixture of not less than two metals where not less than 50% of the finished metal~~ metal alloy where the principal component is copper.

Commenter's Reason: This definition is similar to definitions found on the internet and was approved by the IPC.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This definition simply clarifies what is already required by the code and therefore, does not impact the cost of materials.

P1-18 Part V

P1-18 Part VI

IPSDC: 202 (New)

Proposed Change as Submitted

Proponent: Pennie L Feehan, representing Copper Development Association (penniefeehan@me.com)

2018 International Private Sewage Disposal Code

Add new definition as follows

COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.

Reason: See Part I

Cost Impact: The code change proposal will not increase or decrease the cost of construction
THis is just a definition for clarification.

P1-18 Part VI

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: A copper content as low as 50 percent is not an appropriate value for all applications covered by this code. (Vote:11-2)

Assembly Action: **None**

P1-18 Part VI

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie L Feehan, representing Copper Development Association (penniefeehan@me.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Private Sewage Disposal Code

COPPER ALLOY. A ~~homogeneous mixture of not less than two metals where not less than 50% of the finished metal~~ metal alloy where the principal component is copper.

Commenter's Reason: This definition is similar to definitions found on the internet and was approved by the IPC.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This definition simply clarifies what is already required by the code and therefore, does not impact the cost of materials.

P1-18 Part VI

NOTE: P1-18 Part I DID NOT RECEIVE A PUBLIC COMMENT AND IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY

P1-18 Part I

IPC: 202 (New)

Proposed Change as Submitted

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

THIS IS A 6 PART CODE CHANGE PROPOSAL. PARTS I and VI WILL BE HEARD BY THE IPC-IPSDC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. PART III WILL BE HEARD BY THE IMC COMMITTEE. PART IV WILL BE HEARD BY THE IFGC COMMITTEE. PART V WILL BE HEARD BY THE ISPSC COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Add new definition as follows

COPPER ALLOY. A homogeneous mixture of not less than two metals where not less than 50% of the finished metal is copper.

Reason: It is important to understand that copper tube is an almost pure copper alloy, composed of 99.9% Cu + Ag combined with no greater than 0.04% P. Whereas, a copper alloy is a mixture of at least two metals in which copper is the primary component comprising no less than 50% and is combined with other elements to create different copper alloys. Therefore, brass, bronze, red brass, etc. are all forms of Copper Alloy.

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.

P1-18 Part I

Public Hearing Results

Committee Action: As Modified

Committee Modification: COPPER ALLOY. A metal alloy where the principle component ~~homogeneous mixture of not less than two metals where not less than 50% of the finished metal~~ is copper.

Committee Reason: For the Modification: A less prescriptive copper requirement allows for a wider range of materials. For the Proposal: The term is used in various locations of the code and needs to be defined. (Vote:12-2)

Assembly Action: None

P1-18 Part I

P13-18

IPC: TABLE 403.1 (IBC: [P] TABLE 2902.1)

Proposed Change as Submitted

Proponent: Don Davies, Salt Lake City Corporation, representing Utah Chapter of International Code Council (don.davies@slcgov.com)

2018 International Plumbing Code

Revise as follows

TABLE 403.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURESa (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
		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, 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]
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
		Reformitories, 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
		Hostels (transient)	1 per 10	1 per 10	1 per 8	1 per 100	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	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
7	Residential	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

Reason: Hostels are not addressed in the code and they are unique in that they operate like a hotel/motel for transient stay as an R-1 occupancy but the restrooms facilities provided resemble the requirements for R-2 boarding houses where

restroom facilities are shared as opposed to hotels and motels where each sleep unit must be provided with its own water closet, lavatory and tub or shower. This creates a problem when applying the provisions of I.B.C. Table 2902.1. The resolution would be to create another R-1 occupancy designation with a description of Hostels and place the requirements for plumbing fixtures from R-2 boarding houses into that classification. A president has already been established with two R-2 classifications one for boarding houses and another for apartments which have different requirements . Arbitrarily placing hostels in an R-2 occupancy group would also subject that use to the more restrictive accessibility requirements of I.B.C. Section 1106.2.2.1. While hostels are not that common in the U.S. they are quite common elsewhere in the world and the I.B.C. is an international code so this issue should be addressed.

Cost Impact: The code change proposal will decrease the cost of construction
As the code is written, the hostel would be required to be classified as an R-1 occupancy and would required to have restrooms in each sleeping room. With the proposed change, the hostel classification would still remain an R-1 occupancy but the number of restrooms would decrease.

Analysis: Duplicated text in the IBC is not shown for brevity.

P13-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Coverage for hostels needs to begin by the IBC identifying the group classification that they fall under. (Vote:13-1)

Assembly Action: **None**

P13-18

Individual Consideration Agenda

Public Comment 1:

Proponent: William Warlick, representing Salt Lake City Building Services (william.warlick@slcgov.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Building Code

HOSTEL. Lodging facility for transient stay providing shared bathing and restroom facilities and where community cooking facilities may or may not be provided on site.

310.2 Residential Group R-1. Residential Group R-1 occupancies containing *sleeping units* where the occupants are primarily *transient* in nature, including:

Boarding houses (*transient*) with more than 10 occupants
Congregate living facilities (*transient*) with more than 10 occupants
Hostels
Hotels (*transient*)
Motels (*transient*)

310.3 Residential Group R-2. Residential Group R-2 occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature, including:

Apartment houses
Congregate living facilities (nontransient) with more than 16 occupants

Boarding houses (*nontransient*)
Convents
Dormitories
Fraternities and sororities
Monasteries

Hostels
Hotels (nontransient)
Live/work units
Motels (nontransient)
Vacation timeshare properties

Commenter's Reason: As requested by the Committee, we propose a definition for *hostel* in the IBC Chapter 2 and add the defined term to Group R1 and R2 descriptions.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction This public comment only clarifies the what the proposal intends to regulate. As indicated in the proposal, the cost of construction will decrease because fewer toilet facilities will be required.

P13-18

P14-18

IPC: 403.1.1

Proposed Change as Submitted

Proponent: Josephine Ortega, representing University of California

2018 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.

~~Exception~~ Exceptions:

1. The total occupant load shall not be required to be divided in half where *approved* statistical data indicates a distribution of the sexes of other than 50 percent of each sex.
2. Where multi-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100%, based on total occupant load. In such multi-user user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall.

Reason: This proposal will permit designers to design gender specific facilities using either the men or women category. The proposal will also bridge the gap of designing for facilities that elect to install all-inclusive bathroom/restrooms.
1. See attached

Bibliography: [Title of book] [Report/Document #] [Author] [Year published] [Page #]
[Link to website for additional information]

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This proposal will permit designers to design gender specific facilities using either the men or women category. The proposal will also bridge the gap of designing for facilities that elect to install all-inclusive bathroom/restrooms.

1. See attached

[Title of book] [Report/Document #] [Author] [Year published] [Page #]

[Link to website for additional information]

P14-18

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (Vote:10-4)

Assembly Action: **None**

P14-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Bryan Romney, representing selfrequests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

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 indicates a distribution of the sexes of other than 50 percent of each sex.
2. Where adopted by local, state or federal law in the jurisdiction to allow multi-user facilities ~~are~~ designed to serve all genders, the minimum fixture count shall be calculated 100%, based on total occupant load. In such multi-user user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall.

Commenter's Reason: Approve as modified by this Public Comment.
The IBC and IPC and other legacy codes have for many years prescribed the requirements for multi-stall toilet facilities for male and female. The expectation of separate facilities for male and female has long been accepted by the public and code officials as a point of law and even civil rights. Recent changes to this expectation have prompted this proposed code change which could be adopted in the IPC and ultimately in the IBC for All-Inclusive multi-stall toilet facilities. However, this issue is not a building or plumbing code issue, it is more appropriately a civil rights issue which should be decided in the judicial system, public referendum, state law, ordinance, or whatever mechanism is recognized by the jurisdiction to establish legal and defensible and constitutional law. The language of this proposed code change does not stipulate whether action by the code official to allow Exception #2 is legal and constitutional which honors the civil rights of all people. The proposed code change would put at risk the actions by the jurisdiction, permit applicant and potentially those involved in the design and construction of an all-inclusive toilet facility without first having been vetted by the public and deemed law for the city, county, state or other jurisdictional areas governed by the IBC and IPC.

For example, if an all-inclusive toilet facility was constructed and a segment of the public decided that this facility was a violation of privacy and was an act of discrimination of their civil rights and legal action ensued, without the due process of law to vet this type of facility as legal and adopted by law, this all-inclusive toilet facility and the actions by those who approved and built it would be at risk of legal action. Other potential objections which could prompt such legal challenges are those people who question the impact of all-inclusive toilet facilities on children (Group E Occupancies) for age groups kindergarten through the 12th grade, the lack of privacy in the sink area, sanitation of the water closets in the stalls used by both men and women, or the action by jurisdictions to require all-inclusive toilet rooms in places of worship or other public buildings. There is no language in this proposed code change which restricts a jurisdiction from required compliance to Exception #2 at will for all or certain occupancies.

Additionally, the proponent in the Reason statement includes bathrooms in addition to restrooms. It is unclear as to the intent of the proponent to include bathrooms. There are no proposed code changes for all-inclusive bathrooms. If there is a proposed code change for bathrooms to be designed as all-inclusive facilities, then the same reasons as described above apply and must be considered for modifications as proposed by this Public Comment.

It is of vital importance that this proposed code change be modified by this public comment in order to protect all people's civil rights and avoid legal action. This proposed code change is not an exception which belongs in the IPC and IBC alone, but rather an action which should be determined by the due process of the law. Provide a safe and defensible position for the jurisdiction, the code official, the permit applicant, the design professionals, the contractors and others by approving this Public Comment.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction
The cost impact shown in the original proposed code change is not accurate. The cost impact by the proposed code change is significantly more when compared to the cost of a typical toilet room. The proposed All-Inclusive Toilet Room would require the construction of separate stalls for water closets and urinals. This construction would require floor to ceiling walls and doors which will need finishes which are durable and waterproof in accordance with IBC section 1210.2.2. The partition construction of each stall would be a custom installation as compared to a manufactured metal compartment system currently used. The door for each stall would need to be a type of door and frame which has acoustic features not required currently. The individual stalls proposed for All-Inclusive Toilet Rooms will require individual HVAC systems and Individual Lighting systems. These requirements under the current code requirements are significantly less when compared to potential design solutions for the All-Inclusive toilet room proposal. Without further assessment of the cost impact, disapproval of this proposed change should be reason enough for disapproval.

Public Comment 2:

Proponent: Jason Phelps, representing Self (jason.phelps@hillsboro-oregon.gov)requests Disapprove.

Commenter's Reason: This proposal is intended to allow men and women to share the same restroom, but it does not address the separate facilities code sections at all. This adds confusion to the code and this proposal should not be approved. Also, approval of P15-18 makes this proposal obsolete.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Disapproval of this proposal will not cause the code to require anything more or less than it does now.

Public Comment 3:

Proponent: Bryan Romney, University of Utah, representing selfrequests Disapprove.

Commenter's Reason: Move to Disapprove
The IBC and IPC and other legacy codes have for many years prescribed the requirements for multi-stall toilet facilities for male and female. The expectation of separate facilities for male and female has long been accepted by the public and code officials as a point of law and even civil rights. Recent changes to this expectation have prompted this proposed code change which could be adopted in the IPC and ultimately in the IBC for All-Inclusive multi-stall toilet facilities. However, this issue is not a building or plumbing code issue, it is more appropriately a civil rights issue which should be decided in the judicial system, public referendum, state law, ordinance, or whatever mechanism is recognized by the jurisdiction to establish legal and defensible and constitutional law. The language of this proposed code change does not stipulate whether action by the code official to allow Exception #2 is legal and constitutional which honors the civil rights of all people. The proposed code change would put at risk the actions by the jurisdiction, permit applicant and potentially those involved in the design and construction of an all-inclusive toilet facility without first having been vetted by the public and deemed law for the city, county, state or other jurisdictional areas governed by the IBC and IPC.

For example, if an all-inclusive toilet facility was constructed and a segment of the public decided that this facility was a violation of privacy and was an act of discrimination of their civil rights and legal action ensued, without the due process of law to vet this type of facility as legal and adopted as law, this all-inclusive toilet facility and the actions by those who approved and built it would be at risk of legal action. Other potential objections which could prompt such legal challenges are those persons who question the impact of all-inclusive toilet facilities on children (Group E Occupancies) for age groups kindergarten through the 12th grade, the lack of privacy in the sink area, sanitation of the water closets in the stalls used by both men and women, or the action by jurisdictions to require all-inclusive toilet rooms in places of worship or other public buildings. There is no language in this proposed code change which restricts a jurisdiction from required compliance to Exception #2 at will for all or certain occupancies.

Additionally, the proponent in the Reason statement includes bathrooms in addition to restrooms. It is unclear as to the intent of the proponent to include bathrooms. There are no proposed code changes for all-inclusive bathrooms. If there is a proposed code change for bathrooms to be designed as all-inclusive facilities, then the same reasons as described above apply and must be considered for disapproval.

Disapproval is requested.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction

The cost impact shown in the original proposed code change is not accurate. The cost impact by the proposed code change is significantly more when compared to the cost of a typical toilet room. The proposed All-Inclusive Toilet Room would require the construction of separate stalls for water closets and urinals. This construction would require floor to ceiling walls and doors which will need finishes which are durable and waterproof in accordance with IBC section 1210.2.2. The partition construction of each stall would be a custom installation as compared to a manufactured metal compartment system currently used. The door for each stall would need to be a type of door and frame which has acoustic features not required currently. The individual stalls proposed for All-Inclusive Toilet Rooms will require individual HVAC systems and Individual Lighting systems. These requirements under the current code requirements are significantly less when compared to potential design solutions for the All-Inclusive toilet room proposal. Without further assessment of the cost impact, disapproval of this proposed change should be reason enough for disapproval.

P14-18

P15-18

IPC: 403.1.1 (IBC [P] 2902.1.1), 403.1.2 (IBC [P] 2902.1.2), 403.2 (IBC [P] 2902.2)

Proposed Change as Submitted

Proponent: David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

2018 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.

~~Exception~~ Exceptions:

1. The total occupant load shall not be required to be divided in half where *approved* statistical data indicates a distribution of the sexes of other than 50 percent of each sex.
2. 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 ~~facility~~ and bathing room fixtures. The plumbing fixtures located in single-user toilet ~~facilities~~ and bathing rooms, including family or assisteduse toilet and bathing rooms that are required by Section 1109.2.1 of the International Building Code, shall contribute toward the total number of required plumbing fixtures for a building or tenant space. Single-user toilet ~~facilities~~ and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified for use by either 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.

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 toilets 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 and privacy for water closets are installed in accordance with Section 405.3.4.

Reason: As part of the changes to the 2018 code provisions were added to allow single user toileting features to be counted toward the total number of fixtures required despite their designation by sex or family. This change is proposed to clarify how toilet rooms that are configured in such a manner to allow use by either sex can also be used. Many communities have been asking to use these provisions in advance of full adoption of the 2018 codes because of their need to address significant issues of gender and equality for access.
The codes only require the installation of family or assisted-use facilities in a limited number of occupancies. With this change the codes will allow the design of facilities that are available to those needing assistance by other assistants that are of an opposite gender without causing any discomfort by anyone.

Cost Impact: The code change proposal will decrease the cost of construction
This change would reduce the cost of construction because the duplication of areas used for single sex facilities can be eliminated saving unneeded floor area.

Analysis: Duplicated text in the International Building Code is not shown for brevity.

P15-18

Public Hearing Results

Committee Action: As Modified

Committee Modification: 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. 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.

Committee Reason: For the Modification: For multi-user, both sex toilet facilities, urinals need to have similar visual separation.
For the Proposal: The Committee agreed with the published reason statement. (Vote:11-3)

Assembly Action: None

P15-18

Individual Consideration Agenda

Public Comment 1:

Proponent: James Colgate, representing National Center for Transgender Equality (james.colgate@bryancave.com)requests As Modified by This Public Comment.

Further modify as follows:

2018 International Plumbing Code

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 toilets 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 and privacy for water closets are installed in accordance with Section 405.3.4. ~~Urinals~~ Urinals shall be located in an area ~~visually~~ physically separated from the remainder of the facility by a door or each urinal that is provided shall be located in a stall.

Commenter's Reason: The 2018 code provisions were modified to allow single user toilets to be counted toward the total number of fixtures required. This change clarifies that such single user toilets shall not be required to be designated by sex.
Further this change seeks to eliminate the requirement that separate facilities are required in grouped toilet facilities and to permit an alternative design option. Private establishments in the United States and many establishments throughout Europe already offer gender neutral facilities, which have proven to be useful, effective and economical. This change would address issues of gender and equality and will address the issue of a person or child needing assistance by a person of a different gender.

Lastly, the provision on urinals addresses restrooms that may be converted to this newly permitted design or newly built facilities that provide urinals. This change ensures that urinals are kept separate from the facility at large to prevent causing any discomfort to persons using such facilities.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction
This change would effectively decrease the cost of construction by eliminating the duplication of space needed for separate facilities. The number of fixtures required would remain the same, but waiting time would be reduced by allowing any person to use any available facility.

Public Comment 2:

Proponent: Jason Phelps, representing Self (jason.phelps@hillsboro-oregon.gov)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

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 toilets 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 and privacy for water closets and urinals ~~are installed~~ is provided in accordance with Section 405.3.~~4.~~ 6. ~~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~~.

405.3.6 Privacy, multi-user either sex toilet rooms. Where rooms having multiple water closets or urinals are designed for use by either sex, such rooms shall comply with all of the following:

1. Each water closet and each urinal shall be located in a compartment having floor-to-ceiling walls or partitions. The compartment door shall comply with all of the following:

   1.1. The door height shall be not less than 6 feet, 8 inches.
   1.2. The head jamb and side jambs of the door frame shall have continuous stop mouldings that prevent viewing of the compartment interior when the door is closed.
   1.3. The door locking hardware shall provide an exterior indication that the door is secured from the inside of the compartment.
2. Each compartment shall be provided with exhaust ventilation.

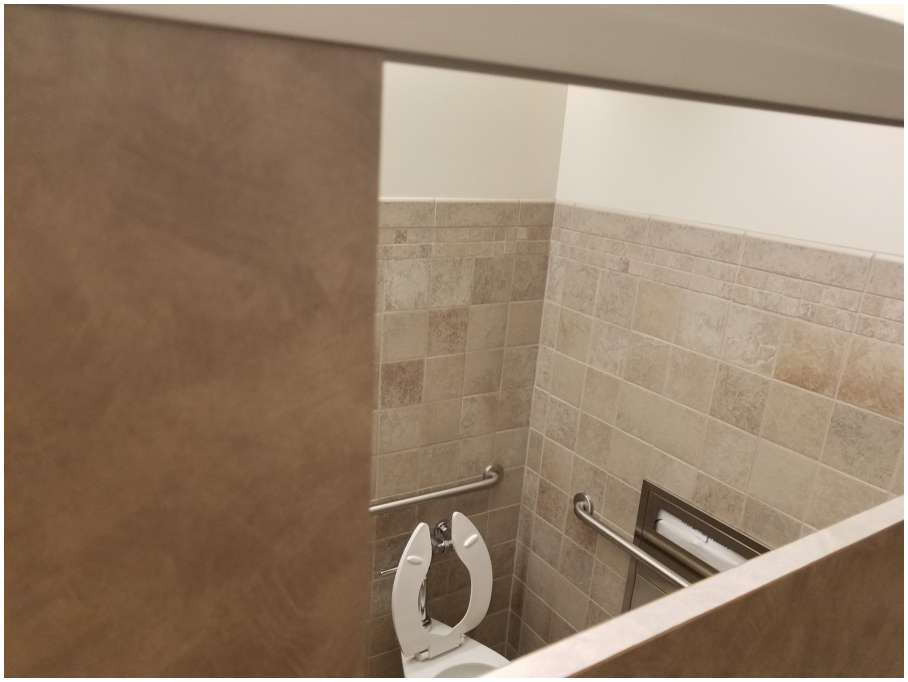
The required number of lavatories shall be permitted to be located within water closet or urinal compartments provided that both of the following apply:

1. Not more than one required lavatory is located in a compartment.
2. Not more than ½ of the required number of lavatories are located in compartments.

Commenter's Reason: This original proposal sends the user to section 405.3.4 for privacy requirements. This proposal also allows men and women to share the restroom. This has never been approved for restrooms with multiple water closets.
Section 405.3.4 states that water closets shall occupy a separate compartment to ensure privacy . This language is too ambiguous and unclear. Without a definition for privacy , additional provisions are needed to add clarity.

This public comment will add the necessary privacy and safety that is needed for a proposal like this to be approved. Attached are several photos showing very typical gaps of up to 1 inch around doors and near walls as well as privacy concerns above and below the partition walls.

Also attached is a design guide approved by the City of Portland that addresses this very scenario.



Bureau of Development Services FROM CONCEPT TO CONSTRUCTION

CODE GUIDE

TOPIC: **Separate Facilities - OSSC/29/#2**

CODE: **Oregon Structural Specialty Code: 2014 Edition**

REVISED: **December 29, 2016** ***[Paul L. Scarlett]*, Director**

REFERENCE: **Oregon Structural Specialty Code – Chapter 29**

SUBJECT: **Requirements for Separate Facilities for Plumbing Systems**

QUESTION: What constitutes a separate facility for each sex where plumbing fixtures are required?

RESPONSE: The Oregon Structural Special Code (OSSC) Section 2902.2 states that where plumbing fixtures are required, separate facilities shall be provided for each sex. However, "separate facilities" are not defined by the OSSC. The Bureau of Development Services (BDS) has determined that facilities meeting the following requirements may be considered separate facilities for the purposes of this code section. See Figure 1.

A. **Full Height Walls and Doors.** Each water closet must be enclosed by a 6'-8" minimum door that fills the door frame, and floor to ceiling partitions or walls;

B. **Overlapping Jambs.** Each water closet must have a doorjamb that overlaps the door in the closed position;

C. **Occupied Indicators.** Each water closet must have locking hardware that functions with an indicator showing whether it is occupied or vacant;

D. **Ventilation.** Each water closet must have separate ventilation;

E. **Lavatories.** The lavatory(s) may be located within the water closet or outside of the water closets in a cluster setting; and

F. **Other Requirements.** All other code requirements, including but not limited to, minimum number of fixtures required, accessibility, family or assisted-use facilities, and signage must be met.

OSSC/29/#2
Requirements for Separate Facilities for Plumbing Systems
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December 29, 2016

Facilities where the aggregate of water closets and lavatories are located in separate rooms for each sex may also be considered separate facilities for the purpose of this code section. See Figure 2.

Other alternatives may be reviewed and considered on a case-by-case basis through the BDS administrative appeals process.

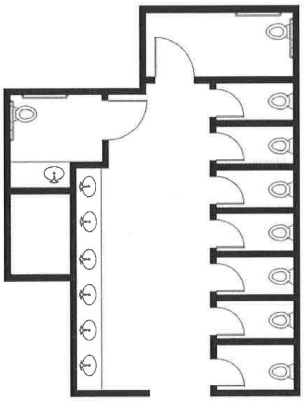

FIGURE 1

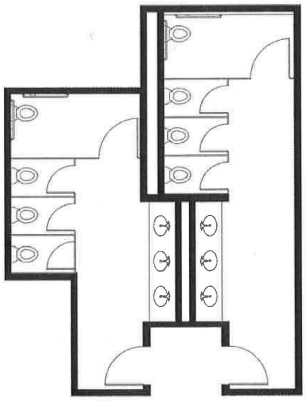

FIGURE 2

New September 16, 2016
Revised December 29, 2016

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction This public comment will add the necessary privacy and safety provisions for this proposal to be approved.

Public Comment 3:

Proponent: Bruce Pitts, representing Self (bhpbhp@yahoo.com)requests As Modified by This Public Comment.

Further modify as follows:

2018 International Plumbing Code

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 toilets rooms are provided in accordance with Section 403.1.2.
6. Separate facilities shall not be required ~~where rooms having both~~ for water closets located in floor-to-ceiling compartments, with solid, full-height, lockable doors and occupied indicators identified for use by all genders. Any interior compartment door undercuts shall not exceed 0.5 inch (13 mm). ~~lavatory fixtures are designed for use by both sexes and privacy for water closets are installed in accordance with Section 405.3.4.~~ In all gender toilet rooms containing water closets, lavatories and urinals, urinals that are provided shall be located in an area visually separated from the remainder of the facility, or each urinal ~~that is provided~~ shall be identified and located in a ~~stall~~ compartment by these provisions.

Commenter's Reason: Referencing IPC Section 405.3.4 for privacy could result in partial-height compartments found in separate-sex facilities. All gender facilities solve state bathroom bills, provide potty parity, accommodate opposite-sex parent-caregivers and reduce floor area. Minimum compartment door undercuts are important for privacy and sound attenuation. A door as narrow as 22 inches wide with a 0.5 inch undercut satisfies a 0.08 in wg pressure drop and a 1.5 loss coefficient at maximum 70 CFM exhaust per IMC Table 403.3.1.1. Example of a 22 inch door undercut height = (70 CFM/4005) x (1.5/.08)^.5 = 0.078 square feet x 144 square inches/square feet = 10.9 square inches/22 inch wide door = 0.49 inch high door undercut height, round up to 0.5 inch. Wider doors at this undercut would have even better pressure drop and loss coefficients.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction

One all-gender facility instead of two separate-sex facilities reduces floor area.

Public Comment 4:

Proponent: Bryan Romney, representing selfrequests As Modified by This Public Comment.

Further modify as follows:

Commenter's Reason: Approve as modified by this Public Comment.
The IBC and IPC and other legacy codes have for many years prescribed the requirements for multi-stall toilet facilities for male and female. The expectation of separate facilities for male and female has long been accepted by the public and code officials as a point of law and even civil rights. Recent changes to this expectation have prompted this proposed code change which could be adopted in the IPC and ultimately in the IBC for All-Inclusive multi-stall toilet facilities. However, this issue is not a building or plumbing code issue, it is more appropriately a civil rights issue which should be decided in the judicial system, public referendum, state law, ordinance, or whatever mechanism is recognized by the jurisdiction to establish legal and defensible and constitutional law. The language of this proposed code change does not stipulate whether action by the code official to allow Exception #2 is legal and constitutional which honors the civil rights of all people. The proposed code change would put at risk the actions by the jurisdiction, permit applicant and potentially those involved in the design and construction of an all-inclusive toilet facility without first having been vetted by the public and deemed law for the city, county, state or other jurisdictional areas governed by the IBC and IPC.

For example, if an all-inclusive toilet facility was constructed and a segment of the public decided that this facility was a violation of privacy and was an act of discrimination of their civil rights and legal action ensued, without the due process of law to vet this type of facility as legal and adopted as law, this all-inclusive toilet facility and the actions by those who approved and built it would be at risk of legal action. Other potential objections which could prompt such legal challenges are those who question the impact of all-inclusive toilet facilities on children (Group E Occupancies) for age groups kindergarten through the 12th grade, the lack of privacy in the sink area, sanitation of the water closets in the stalls used by both men and women, or the action by jurisdictions to require all-inclusive toilet rooms in places of worship or other public buildings. There is no language in this proposed code change which restricts a jurisdiction from required compliance to Exception #2 at will for all or certain occupancies.

Additionally, the proponent in the Reason statement does not include reasons for all-inclusive bathrooms or restrooms. It is unclear as to the intent of the proponent to not include the reasons. There are no proposed code changes for all-inclusive bathrooms only toilet facilities. If there is a proposed code change for bathrooms to be designed as all-inclusive facilities, then the same reasons as described above apply and must be considered for disapproval.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction
The cost impact shown in the original proposed code change is not accurate. The cost impact by the proposed code change is significantly more when compared to the cost of a typical toilet room. The proposed All-Inclusive Toilet Room would require the construction of separate stalls for water closets and urinals. This construction would require floor to ceiling walls and doors which will need finishes which are durable and waterproof in accordance with IBC section 1210.2.2. The partition construction of each stall would be a custom installation as compared to a manufactured metal compartment system currently used. The door for each stall would need to be a type of door and frame which has acoustic features not required currently. The individual stalls proposed for All-Inclusive Toilet Rooms will require individual HVAC systems and Individual Lighting systems. These requirements under the current code requirements are significantly less when compared to potential design solutions for the All-Inclusive toilet room proposal. Without further assessment of the cost impact, it is unknown the potential cost impact to these types of projects.

Public Comment 5:

Proponent: Jason Phelps, representing Self (jason.phelps@hillsboro-oregon.gov)requests Disapprove.

Commenter's Reason: This proposal allows men and women to share a restroom with multiple stalls without any additional privacy requirements. This will create a very unsafe and uncomfortable environment, especially for women and children.
I think gender neutral restrooms are great and should be limited to single user restrooms only. We do not need men to have access to the women's restroom and I think that has been demonstrated in the few cases this has been tried already.

Also, this practice is not currently being done widespread in Europe as so easily claimed by the proponent. Lastly, I was at the code hearings and I can tell you the committee was not prepared to vote on this issue. One committee member even asked staff why this was not in the IBC general committee.

I urge your disapproval on this issue.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Disapproval of this proposal will not cause the code to require anything more or less than it does now.

Public Comment 6:

Proponent: Bryan Romney, representing selfrequests Disapprove.

Commenter's Reason: Move to Disapprove
The IBC and IPC and other legacy codes have for many years prescribed the requirements for multi-stall toilet facilities for male and female. The expectation of separate facilities for male and female has long been accepted by the public and code officials as a point of law and even civil rights. Recent changes to this expectation have prompted this proposed code change which could be adopted in the IPC and ultimately in the IBC for All-Inclusive multi-stall toilet facilities. However, this issue is not a building or plumbing code issue, it is more appropriately a civil rights issue which should be decided in the judicial system, public referendum, state law, ordinance, or whatever mechanism is recognized by the jurisdiction to establish legal and defensible and constitutional law. The language of this proposed code change does not stipulate whether action by the code official to allow Exception #2 is legal and constitutional which honors the civil rights of all people. The proposed code change would put at risk the actions by the jurisdiction, permit applicant and potentially those involved in the design and construction of an all-inclusive toilet facility without first having been vetted by the public and deemed law for the city, county, state or other jurisdictional areas governed by the IBC and IPC.

For example, if an all-inclusive toilet facility was constructed and a segment of the public decided that this facility was a violation of privacy and was an act of discrimination of their civil rights and legal action ensued, without the due process of law to vet this type of facility as legal and adopted as law, this all-inclusive toilet facility and the actions by those who approved and built it would be at risk of legal action. Other potential objections which could prompt such legal challenges are those who question the impact of all-inclusive toilet facilities on children (Group E Occupancies) for age groups kindergarten through the 12th grade, the lack of privacy in the sink area, sanitation of the water closets in the stalls used by both men and women, or the action by jurisdictions to require all-inclusive toilet rooms in places of worship or other public buildings. There is no language in this proposed code change which restricts a jurisdiction from required compliance to Exception #2 at will for all or certain occupancies.

Additionally, the proponent in the Reason statement does not include reasons for all-inclusive bathrooms or restrooms. It is unclear as to the intent of the proponent to not include the reasons. There are no proposed code changes for all-inclusive bathrooms only toilet facilities. If there is a proposed code change for bathrooms to be designed as all-inclusive facilities, then the same reasons as described above apply and must be considered for disapproval.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction

The cost impact shown in the original proposed code change is not accurate. The cost impact by the proposed code change is significantly more when compared to the cost of a typical toilet room. The proposed All-Inclusive Toilet Room would require the construction of separate stalls for water closets and urinals. This construction would require floor to ceiling walls and doors which will need finishes which are durable and waterproof in accordance with IBC section 1210.2.2. The partition construction of each stall would be a custom installation as compared to a manufactured metal compartment system currently used. The door for each stall would need to be a type of door and frame which has acoustic features not required currently. The individual stalls proposed for All-Inclusive Toilet Rooms will require individual HVAC systems and Individual Lighting systems. These requirements under the current code requirements are significantly less when compared to potential design solutions for the All-Inclusive toilet room proposal. Without further assessment of the cost impact, disapproval of this proposed change should be reason enough for disapproval.

P15-18

P17-18

IPC: 403.2 (IBC [P]2902.2)

Proposed Change as Submitted

Proponent: James P. Colgate, Esq., RA, CFM, Bryan Cave LLP, representing National Center for Transgender Equality (James.Colgate@bryancave.com); David Collins, representing The American Institute of Architects (dcollins@preview-group.com)

2018 International Plumbing Code

Revise as follows

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 where all water closet compartments are provided with partitions, including the doors thereto, that extend to the floor and to the ceiling.

Reason: Colleges across the United States, private businesses, membership clubs, and many establishments throughout Europe have adopted an alternative design for bathroom and toilet facilities that removes the requirement that such facilities be designated for use by a specific sex. This design has proven to be useful, effective, and economical. NCTE's proposal would give designers the option of group toilet rooms regardless of sex, as long as each stall has partitions on all four sides that extend to the floor. Partitions ensure that the user's privacy is maintained. This proposal is advantageous because the partitions remove the embarrassment that many people face in a shared restroom facility. Additionally, group toilet facilities promote shorter wait times for the restroom and waste less space on a general bathroom waiting area.

This proposal also shares many of the benefits the Membership intended when they adopted P40-15, Public Comment 2. Specifically, grouped toilet facilities mitigate the anxiety transgender individuals experience when they are required to use the bathroom that does not match their identity. Allowing designers to construct gender-neutral toilet facilities will save proprietors time, money, and space without having to construct two identical bathrooms for each sex.

It should be noted that this proposal does not trigger compliance with Exception 2 of Section 1109.2 of the *International Building Code*, which requires that 50% of single-user toilet or bathing rooms clustered in a single location be accessible. Section 1109.2.1.2 of the *International Building Code* defines "toilet room" to include a water closet and a lavatory. Under NCTE's proposed design scheme, the partitioned stalls need not contain sinks or wash basins, and would therefore be treated as ordinary toilet compartments and subject to the 5% rule of Section 1109.2.2 of the *International Building Code*.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The same numbers of fixtures are still required and waiting time will be reduced by allowing any sex to use the available toilet stalls. Further, the general waiting area and space required for two facilities will not be necessary in places with this design option. While that may save a small cost, an additional cost may be expended to create partitions on all four sides that extend to the floor.

Analysis: Duplicated text in the International Building Code is not shown for brevity.

P17-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The Committee preferred P16-18 for handling the topic. (Vote:14-0)

Assembly Action: **None**

P17-18

Individual Consideration Agenda

Public Comment 1:

Proponent: James Colgate, representing National Center for Transgender Equality (james.colgate@bryancave.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

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 where all water closet compartments are provided with partitions, including the doors thereto, that extend to the floor and to the ceiling, with no gaps between the doors and partitions. Urinals shall be located in a room separated from the remainder of the facility or each urinal that is provided shall be located in a compartment equivalent to those required for water closets.

Commenter's Reason: This change seeks to eliminate the requirement that separate facilities are required in grouped toilet facilities and to permit an alternative design option. Colleges across the United States, private businesses, membership clubs and many establishments throughout Europe already offer this design, which has proven to be useful, effective and economical. This change would address issues of gender and equality and will address the issue of a person or child needing assistance by a person of a different gender.
Further, this provision addresses privacy concerns that may result from the implementation of gender neutral restrooms. By requiring stalls that are entirely enclosed, each user will experience complete privacy in a gender neutral facility. Further, this provision ensures that urinals are kept private from the remainder of the gender neutral facility, such that anyone not using a urinal would not be exposed to any discomfort.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change would likely not affect the cost of construction. While cost is decreased by eliminating the duplication of space needed for separate facilities, cost is increased because of the requirement to build larger doors and possibly require separate lighting and ventilation in such stalls. The number of fixtures required would remain the same and waiting time would be reduced by allowing any person to use any available facility.

Public Comment 2:

Proponent: Bryan Romney, representing selfrequests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

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~~ Where adopted by local, state or federal law in the jurisdiction to allow multi-user facilities designed to serve all genders, separate facilities shall not be required where all water closet compartments are provided with partitions, including the doors thereto, that extend to the floor and to the ceiling.

Commenter's Reason: Approved as modified by this Public Comment.
The IBC and IPC and other legacy codes have for many years prescribed the requirements for multi-stall toilet facilities for male and female. The expectation of separate facilities for male and female has long been accepted by the public and code officials as a point of law and even civil rights. Recent changes to this expectation have prompted this proposed code change which could be adopted in the IPC and ultimately in the IBC for All-Inclusive multi-stall toilet facilities. However, this issue is not a building or plumbing code issue, it is more appropriately a civil rights issue which should be decided in the judicial system, public referendum, state law, ordinance, or whatever mechanism is recognized by the jurisdiction to establish legal and defensible and constitutional law. The language of this proposed code change does not stipulate whether action by the code official to allow Exception #5 is legal and constitutional which honors the civil rights of all people. The proposed code change would put at risk the actions by the jurisdiction, permit applicant and potentially those involved in the design and construction of an all-inclusive toilet facility without first having been vetted by the public and deemed law for the city, county, state or other jurisdictional areas governed by the IBC and IPC.

For example, if an all-inclusive toilet facility was constructed and a segment of the public decided that this facility was a violation of privacy and was an act of discrimination of their civil rights and legal action ensued, without the due process of law to vet this type of facility as legal and adopted as law, this all-inclusive toilet facility and the actions by those who approved and built it would be at risk of legal action. Other potential objections which could prompt such legal challenges are those who question the impact of all-inclusive toilet facilities on children (Group E Occupancies) for age groups kindergarten through the 12th grade, the lack of privacy in the sink area, sanitation of the water closets in the stalls used by both men and women, or the action by jurisdictions to require all-inclusive toilet rooms in places of worship or other public buildings. There is no language in this proposed code change which restricts a jurisdiction from required compliance to Exception #5 at will for all or certain occupancies.

Additionally, the proponent in the Reason statement includes bathrooms in addition to restrooms. It is unclear as to the intent of the proponent to include bathrooms. There are no proposed code changes for all-inclusive bathrooms. If there is a proposed code change for bathrooms to be designed as all-inclusive facilities, then the same reasons as described above apply and must be considered for modification.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction
The cost impact shown in the original proposed code change is not accurate. The cost impact by the proposed code change is significantly more when compared to the cost of a typical toilet room. The proposed All-Inclusive Toilet Room would require the construction of separate stalls for water closets and urinals. This construction would require floor to ceiling walls and doors which will need finishes which are durable and waterproof in accordance with IBC section 1210.2.2. The partition construction of each stall would be a custom installation as compared to a manufactured metal compartment system currently used. The door for each stall would need to be a type of door and frame which has acoustic features not required currently. The individual stalls proposed for All-Inclusive Toilet Rooms will require individual HVAC systems and Individual Lighting systems. These requirements under the current code requirements are significantly less when compared to potential design solutions for the All-Inclusive toilet room proposal. Without further assessment of the cost impact, it is unknown the potential cost impact to these types of projects.

Public Comment 3:

Proponent: Joel Sanders, Joel Sanders Architect, representing Stalled! (jsanders@joelsandersarchitect.com)requests As Modified by This Public Comment.

Further modify as follows:

2018 International Plumbing Code

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 where all water closet compartments are provided with partitions, including the doors thereto, that extend to not greater than 4 inches above the floor and to not less than ~~the ceiling~~ 7 feet above the floor.

Commenter's Reason: While the 2018 code provisions were modified to allow single user toilets to be counted toward the total number of fixtures required, this change seeks to eliminate the requirement that separate facilities are required in grouped toilet facilities and to permit an alternative design option.

Private establishments in the United States and many establishments throughout Europe already offer gender neutral facilities, which have proven to be useful, effective and economical. This change has a number of advantages. Transgender and gender non-conforming people who do not identify with their gender assigned at birth will not have to choose between two options—men's room and women's room -- that don't align with their identities. By consolidating a greater number of people in one rather than two rooms, there are more eyes to monitor, reducing risk of violence. Most important, gender neutral facilities meet not only the needs of the trans community, but they also accommodate the needs of a wide range of differently embodied subjects of varying ages, genders, and disabilities. For example, it facilitates caregiving between people of different gender expressions. Now a father can accompany his young daughter, or a woman can take her elderly male friend to the restroom.

This change to the code provision seeks to eliminate typical sex-segregated facilities characterized by stalls whose revealing gaps, at floor, ceiling and doors compromise visual privacy. We recommend implementing stalls that that extend no more than 4 inches from the floor with a height of at least 7 feet to achieve this privacy.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change would likely not affect the cost of construction. Cost is decreased by eliminating the duplication of space needed for separate facilities. While fully-enclosed floor-to-ceiling partitions for stalls are preferable, they are slightly more expensive to build because each stall could require individual lighting and ventilation. Therefore, we propose the more economical approach of stall doors with small gaps at floor and ceiling that ensure complete visual privacy, without impacting mechanical and lighting requirements. This will keep costs to a minimum because then easy-to-install, mass-produced partitions can be used, allowing the stalls to continue to share lighting and ventilation. The number of fixtures required would remain the same and waiting time would be reduced by allowing any person to use any available facility.

Public Comment 4:

Proponent: Bryan Romney, representing selfrequests Disapprove.

Commenter's Reason: The IBC and IPC and other legacy codes have for many years prescribed the requirements for multi-stall toilet facilities for male and female. The expectation of separate facilities for male and female has long been accepted by the public and code officials as a point of law and even civil rights. Recent changes to this expectation have prompted this proposed code change which could be adopted in the IPC and ultimately in the IBC for All-Inclusive multi-stall toilet facilities. However, this issue is not a building or plumbing code issue, it is more appropriately a civil rights issue which should be decided in the judicial system, public referendum, state law, ordinance, or whatever mechanism is recognized by the jurisdiction to establish legal and defensible and constitutional law. The language of this proposed code change does not stipulate whether action by the code official to allow Exception #2 is legal and constitutional which honors the civil rights of all people. The proposed code change would put at risk the actions by the jurisdiction, permit applicant and potentially those involved in the design and construction of an all-inclusive toilet facility without first having been vetted by the public and deemed law for the city, county, state or other jurisdictional areas governed by the IBC and IPC. For example, if an all-inclusive toilet facility was constructed and a segment of the public decided that this facility was a violation of privacy and was an act of discrimination of their civil rights and legal action ensued, without the due process of law to vet this type of facility as legal and adopted as law, this all-inclusive toilet facility and the actions by those who approved and built it would be at risk of legal action. Other potential objections which could prompt such legal challenges are those who question the impact of all-inclusive toilet facilities on children (Group E Occupancies) for age groups kindergarten through the 12th grade, the lack of privacy in the sink area, sanitation of the water closets in the stalls used

by both men and women, or the action by jurisdictions to require all-inclusive toilet rooms in places of worship or other public buildings. There is no language in this proposed code change which restricts a jurisdiction from required compliance to Exception #2 at will for all or certain occupancies.

Additionally, the proponent in the Reason statement does not include reasons for all-inclusive bathrooms or restrooms. It is unclear as to the intent of the proponent to not include the reasons. There are no proposed code changes for all-inclusive bathrooms only toilet facilities. If there is a proposed code change for bathrooms to be designed as all-inclusive facilities, then the same reasons as described above apply and must be considered for disapproval.

The proponent's original proposal was disapproved by Committee action. However, there are multiple Public Comments to allow this proposal to be heard in the Public Hearings. This proposal and it's other Public Comments must be disapproved for the reasons stated above.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction
The cost impact shown in the original proposed code change is not accurate. The cost impact by the proposed code change is significantly more when compared to the cost of a typical toilet room. The proposed All-Inclusive Toilet Room would require the construction of separate stalls for water closets and urinals. This construction would require floor to ceiling walls and doors which will need finishes which are durable and waterproof in accordance with IBC section 1210.2.2. The partition construction of each stall would be a custom installation as compared to a manufactured metal compartment system currently used. The door for each stall would need to be a type of door and frame which has acoustic features not required currently. The individual stalls proposed for All-Inclusive Toilet Rooms will require individual HVAC systems and Individual Lighting systems. These requirements under the current code requirements are significantly less when compared to potential design solutions for the All-Inclusive toilet room proposal. Without further assessment of the cost impact, disapproval of this proposed change should be reason enough for disapproval.

P17-18

P22-18 Part I

IBC: 1109.2.1.7

Proposed Change as Submitted

Proponent: Jason Phelps, representing Self (jason.phelps@hillsboro-oregon.gov)

THIS IS A TWO PART CODE CHANGE. BOTH PARTS OF THIS CODE CHANGE WILL BE HEARD BY THE PLUMBING CODE DEVELOPMENT COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2018 International Building Code

Revise as follows

1109.2.1.7 Privacy. Doors to family or assisted-use toilet and bathing rooms shall be securable from within the room and be provided with an "occupied" indicator.

Reason: This code change proposal will alleviate privacy and safety concerns by requiring the occupied indicator for single user restrooms. Without an occupied indicator, the only way for someone to see if the room is in use is to turn the handle. This causes safety and privacy concerns for the user. This can cause severe discomfort, even fear, for children or people who have suffered trauma. This proposal will proactively provide increased comfort and safety for everyone.

Cost Impact: The code change proposal will increase the cost of construction
Adding the occupied indicator to the already required privacy lock increases the cost of the hardware by no more than a few dollars per door.

P22-18 Part I

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: Users will no longer be alarmed by "handle jiggling" by those on the outside checking to see if the door is locked. (Vote:8-6)

Assembly Action: **None**

P22-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: Jason Phelps, representing Self (jason.phelps@hillsboro-oregon.gov)requests As Modified by This Public Comment.

Further modify as follows:

2018 International Building Code

1109.2.1.7 Privacy. Doors to family or assisted-use toilet and bathing rooms shall be securable from within the room and be provided with an " occupied " indicator. For Group I-1, I-2, and Group B ambulatory care facilities, the type of means for unlocking such doors from the outside of the room shall be the responsibility of the facility designer.

Commenter's Reason: A concern was brought up by the National Association of Healthcare Facilities during the committee action hearings regarding the privacy lock for single user toilet rooms. The privacy lock has always been required, this code proposal simply adds the occupied indicator and was approved by the committee. This public comment adds an exception for healthcare facilities. I have inspected several hospitals and they are currently being built this way. They have a pull chain near the water closet for emergencies and they have a privacy lock with occupied indicator that is openable by staff in case of emergency. This language is meant to clarify the code to match current building practices.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction as stated in the code proposal, the occupied indicator will increase the cost of construction by a few dollars per door.

P22-18 Part I

P22-18 Part II

IPC: 403.3.7; IBC: 2902.3.7

Proposed Change as Submitted

Proponent: Jason Phelps, representing Self (jason.phelps@hillsboro-oregon.gov)

2018 International Plumbing Code

Add new text as follows

403.3.7 Privacy. Doors to single-user toilet and bathing rooms and family or assisted-use toilet and bathing rooms shall be securable from within the room and be provided with an "occupied" indicator.

2018 International Building Code

2902.3.7 Privacy. Doors to single-user toilet and bathing rooms and family or assisted-use toilet and bathing rooms shall be securable from within the room and be provided with an "occupied" indicator.

Reason: This code change proposal will alleviate privacy and safety concerns by requiring the occupied indicator for single user restrooms. Without an occupied indicator, the only way for someone to see if the room is in use is to turn the handle. This causes safety and privacy concerns for the user. This can cause severe discomfort, even fear, for children or people who have suffered trauma. This proposal will proactively provide increased comfort and safety for everyone.

Cost Impact: The code change proposal will increase the cost of construction
Adding the occupied indicator to the already required privacy lock increases the cost of the hardware by no more than a few dollars per door.

P22-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This would result in a risk to life in healthcare facilities and is an unecessary increase in the cost of construction. (Vote:8-6)

Assembly Action: **None**

P22-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Jason Phelps, representing Self (jason.phelps@hillsboro-oregon.gov)requests As Modified by This Public Comment.

Further modify as follows:

2018 International Plumbing Code

403.3.7 Privacy. Doors to single-user toilet and bathing rooms and family or assisted-use toilet and bathing rooms shall be securable from within the room and be provided with an " occupied " indicator. For Group I-1, I-2, and Group B ambulatory care facilities, the type of means for unlocking such doors from the outside of the room shall be the responsibility of the facility designer.

2018 International Building Code

2902.3.7 Privacy. Doors to single-user toilet and bathing rooms and family or assisted-use toilet and bathing rooms shall be securable from within the room and be provided with an " occupied " indicator.

> **Exception:** Group I-1, I-2, and Group B ambulatory care facilities are permitted to have a lock that is openable by staff in case of an emergency.

Commenter's Reason: This exception is meant to clarify the code to match current building practices.A concern was brought up by the National Association of Healthcare Facilities during the committee action hearings regarding the privacy lock for single user toilet rooms. The privacy lock has always been required, this code proposal simply adds the occupied indicator and was approved by the committee. This public comment adds an exception for healthcare facilities. I have inspected several hospitals and they are currently being built this way. They have a pull chain near the water closet for emergencies and they have a privacy lock with occupied indicator that is openable by staff in case of emergency. This language is meant to clarify the code to match current building practices.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction as stated in the code proposal adding the occupied indicator will increase the cost by a few dollars per door.

Public Comment 2:

Proponent: John Williams, representing Healthcare Committee (ahc@iccsafe.org)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

403.3.7 Privacy. ~~Doors~~ Where doors to single-user toilet ~~and~~ room, bathing rooms and family or assisted-use toilet and bathing rooms ~~shall be~~ are securable from within the ~~room and be provided with an "occupied" indicator~~toilet and bathing room the locking devices shall include an occupied indicator.

> **Exception:** Locking devices shall not be required to have occupied indicators on doors for toilet rooms or bathing room in the following locations:

1. Within individual dwelling or sleeping units.
2. Within a private office.

2018 International Building Code

2902.3.7 Privacy. ~~Doors~~ Where doors to single-user toilet ~~and~~ room, bathing rooms and family or assisted-use toilet and bathing rooms ~~shall be~~ are securable from within the ~~room and be provided with an "occupied" indicator~~toilet and bathing room the locking devices shall include an occupied indicator.

Exception: Locking devices shall not be required to have occupied indicators on doors for toilet rooms or bathing room in the following locations:

1. Within individual dwelling or sleeping units.
2. Within a private office.

Commenter's Reason: IBC Section 1209.3.1 Exception 1 requires a lock only on single occupant toilet rooms utilized by the public or employees – therefore, our assumption is that single occupant toilet rooms within apartments, hotel rooms, within private offices, or within a hospital room are not required to have a lock. The original proponent stated that his concerns were for a privacy indicator so that you did not have to knock on the door to see if these rooms are occupied. The revised text would only require the indicator if the door was equipped with a lock. The exception would allow for bathrooms that choose to have locks, such as within a hotel room, to not have to have privacy indicators. This modification will also address the hospital and nursing home concern that bathrooms within a dwelling or sleeping unit (i.e. patient sleeping rooms) are not required to be locked. Within a private office exception will address private bathrooms within doctor's offices.
This public comment is submitted by the ICC Committee on Healthcare (CHC). 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 2017 and 2018 the CHC held 2 open meetings and numerous conference calls*, 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: https://www.iccsafe.org/codes-tech-support/cs/icc-committee-on-healthcare/.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction However, the modification will limit this requirement to where someone provides a lock on a public bathroom.

P22-18 Part II

P23-18

IPC: 403.6

Proposed Change as Submitted

Proponent: Eirene Knott, BRR Architecture, representing Metropolitan Kansas City Chapter of the ICC (Eirene.Knott@brrarch.com)

2018 International Plumbing Code

Add new text as follows

403.6 Service sink location. Service sinks shall not be required to be located in individual tenant spaces in a covered mall provided that service sinks are located within a distance of travel of 300 feet (91 m) of the most remote location in the tenant space and not more than one story above or below the tenant space. Service sinks shall be located on an accessible route.

Reason: There were at least two attempts in the 2015/2016/2017 code development cycle to reduce or remove the requirement of a service sink. One proposal was to not require a service sink where the occupant load was 30 or less. The committee felt that raising the occupant threshold and applying that load across the board would result with some occupancies not having a sink but would need the sink for other regulations such as health code requirements.
The other proposed code changes came from the PMG CAC adding a new section for service sinks allowing for a service sink to be located in a central core of a building. The committee disapproved that code change because it called for a minimum outlet drain of 3 inches in diameter. The committee felt the 3-inch requirement was overkill and felt the proposed code change also superseded the requirements of Table 403.1.

Despite attempts during the public comment phase where both proposal were approved, both were disapproved in the final action process. Based on the action at the public comment phase, there is an understanding that some small tenant spaces, especially those within a mall, do not need to have the service sink in a readily accessible location. Since both drinking fountains and public toilets are allowed to be within 300 feet of a tenant space in a mall, the same travel distance seems reasonable for access to a service sink. I have opted to have this change apply only to tenants within a covered mall as in some parts of the country it may not be practical for tenants in an outdoor mall to push a mop bucket 300 feet in the snow.

For a small tenant that may not meet footnote e to Table 403.1, the addition of a service sink can take up much needed tenant space, let alone add an additional cost that can negatively impact the tenant space overall. Most small tenants do not need a service sink but knowing that one would be available to them, just like a public restroom and drinking fountain are available within the same travel distances, would provide a sense of security.

Cost Impact: The code change proposal will decrease the cost of construction
This may reduce the cost of construction as each individual tenant would not be required to provide a service sink, reducing the cost of materials needed.

P23-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Transporting water for 300 feet in a mop bucket is going to create a slip hazard. The proposal needs expanded to include the requirement that the tenants have access to the service sink. (Vote:12-2)

Assembly Action: **None**

P23-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Eirene Knott, representing Metropolitan Kansas City Chapter of the ICC (eirene.knott@brrarch.com)requests As Submitted.

Commenter's Reason: The committee disapproved this code change citing that transporting water for 300 feet in a mop bucket will create a slip hazard and that tenants need to have access to the service sink.
As the code is currently written, small tenants in mall locations would be required to provide a mop sink when the occupant load for a retail store exceeds 15, per Table 403.1, footnote e . Using the square footage for a retail space of 60 square feet per person, that amounts to tenant spaces which are greater than 900 square feet. However, this small tenant space would not be required to provide toilet facilities as Section 403.3.4 allows for tenant spaces in a mall to be within 300 feet of required toilet facilities. There are often times in a retail setting where getting to the toilet facility can be an emergency yet malls are allowed to have up to 300 feet of travel to get to a toilet facility for both employees and the general public.

Why should a tenant space, which can provide toilet facilities within 300 feet, be required to provide a service sink if one is provided within a reasonable distance to the tenant space? If an employee has 300 feet in which to travel to go to the bathroom, that same distance seems reasonable for an employee to be able to access a service sink rather than provide a plumbing fixture that will seldom, if ever, get used.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction This may reduce the cost of construction as each individual tenant would not be required to provide a service sink, reducing the cost of materials needed.

P23-18

P24-18

IPC: 404.1, 404.2, 404.3

Proposed Change as Submitted

Proponent: Dawn Anderson, representing self (gonedawning@yahoo.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Marsha Mazz, representing U.S. Access Board (mazz@Access-Board.gov); Dominic Marinelli, representing United Spinal Association (DMarinelli@accessibility-services.com)

2018 International Plumbing Code

Revise as follows

404.1 Where required. Accessible plumbing facilities and fixtures shall be provided in accordance with the International Building Code and ICC A117.1.

Delete without substitution

~~**404.2 Accessible fixture requirements.** Accessible plumbing fixtures shall be installed with the clearances, heights, spacings and arrangements in accordance with ICC A117.1.~~

~~**404.3 Exposed pipes and surfaces.** Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact. Pipe coverings shall comply with ASME A112.18.9.~~

Reason: Section 404.2 and 404.3 were added by P42-12. They should be removed for multiple reasons. The reference to IBC would also get a reference to ICC A117.1 in Section 1101.2, however, if there is a concern that this may be missed by plumbing inspectors, the reference can be added in Section 404.1.
In Section 404.2, the laundry list is incomplete on what is required in the A117.1 for accessible plumbing fixtures. Since standards are only referenced to the extent the code sends you there (Section 102.8), this could be misinterpreted as intending to limit requirements that would be applicable in the standard. The requirement for pipe protection is a technical requirement for accessible lavatories, address in A117.1 Section 606.6, so it should not be repeated here. The ASME A112.18.9 standard addresses the requirements for heat transfer, not cold, therefore it only addresses half the issue associated with water, and not all the issues associated with accidental contact. The test for hot water is substantially hotter than tempered water which is required for public lavatories. Also, if the pipes are protected from contact by some type of shield as indicated in the photo, there is no exception for compliance with the standard, even if there is no contact with the pipes. If ASME A112.18.9 should be referenced, this standard should be reviewed through the ICC A117.1 process for technical issues associated with accessibility requirements. It does not belong in the IPC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposal will eliminate possible conflicts between the IPC and ICC A117.1.

P24-18

Public Hearing Results

Committee Action: As Modified

Committee Modification: 404.1 Where required. Accessible plumbing facilities and fixtures shall be provided in accordance with Chapter 11 of the International Building Code ~~and ICC A117.1~~.
404.2 Accessible fixture requirements. Accessible plumbing fixtures shall be installed in accordance with ICC A117.1.

404.3 Exposed pipes and surfaces. Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact. Pipe coverings shall comply with ASME A112.18.9.

Committee Reason: For the Modification: Reference standard ASME A112.18.9 needs to be retained for the pipe coverings. The reference to standard A117.1 needs to be retained to point to the information needed for installation.
For the Proposal: The Committee agreed with the published reason statement. (Vote:13-0)

Assembly Action: None

P24-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Dawn Anderson, representing self (gonedawning@yahoo.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Dominic Marinelli, representing United Spinal Association (DMarinelli@accessibility-services.com)requests As Modified by This Public Comment.

Further modify as follows:

2018 International Plumbing Code

~~**404.3 Exposed pipes and surfaces.** Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact. Pipe coverings shall comply with ASME A112.18.9.~~

Commenter's Reason: Section 404.3 should be deleted. The requirement for pipe protection under the accessible lavatory or sink is already stated in ICC A117.1 Section 606.6. ICC A117.1 Section 606.6 also states that there shall be no sharp or abrasive surfaces under the lavatory or sink, so only part of the requirement is in this section.
The standard referenced in Section 404.3, ASME A112.18.9, should be deleted. During the testimony it was stated that this standard was proposed to the ICC A117.1 and that they were told that standards are not in ICC A117.1. This is not the case – see Section ICC A117.1 Section 105.2 for a list of standards referenced. The ICC A117.1 committee rejected this standard because the standard only requires testing for hot water. It does not address the issue of accidental contact for sharp edges where someone moving under the sink could suffer cuts or bruises - even though that is stated in the purpose of the standard.

From a technical perspective, the test for hot water is substantially hotter than tempered water which is required for public lavatories - specifically 104 degrees Fahrenheit for 5 hours. What is the justification for this? Also, if the pipes are protected from contact by some type of shield, there is no exception for compliance with the standard, even if there is no possible contact with the pipes. The name of this standard is "Protectors/Insulators for Exposed Waste and Supplies on Accessible Fixture', so this standard is not applicable for shielded locations. See the picture in the original proposal for an example.

Also, P25-18 proposed an additional standard ASTM C1822. The reason statement said the new standard covers all of ASME A112.18.9, so therefore this standard would also be redundant. This group does have a public comment to P25 asking for disapproval.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The proposal is only clarification that will eliminate potential conflicts between the IPC and ICC A117.1.

P25-18

IPC: 404.3, Chapter 15

Proposed Change as Submitted

Proponent: Howard Ahern, representing Plumberex Speciality Products

2018 International Plumbing Code

Revise as follows

404.3 Exposed pipes and surfaces. Water supply and drain pipes under accessible lavatories and sinks shall be covered or otherwise configured to protect against contact. Pipe coverings shall comply with ASME A112.18.9 or ASTM C1822.

Add new standard(s) follows

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken PA 19428-2959
US

C1822-2015:

Standard Specification for Insulating Covers on Accessible Lavatory Piping

Reason: There is a new standard that has been developed specifically for insulating covers over water supply pipes and drain piping under accessible lavatories. The new standard is titled: ASTM C1822-2015 Standard Specification for Insulating covers on Accessible Lavatory Piping. The Standard was developed by the C16.40 Thermal Insulation Systems committee. The new standard covers all of ASME A112.18.9 requirements but is a more comprehensive standard than ASME A112.18.9 and has additional language covering requirements related to restrictions on cable tie fasteners associated with a Federal lawsuit.

This code modification allows both the ASME A112 18.9 standard and would also allow ASTM C1822 compliance. designers are able to comply with either standard . Both standards are needed for these products allowing compliance with either standard will help contractors and inspectors with compliance and identification, while also allowing greater compliance with Department of Justice 2010 Americans with Disability Act standard for Assessable Design Standard 606.5 and ANSI Standard A117.1.

Bibliography: Howard Ahern representing Plumberex Speciality Products.
Member ASME A112. 18.9 standard

Chairman ASTM C1822 Standard Committee

Cost Impact: The code change proposal will not increase or decrease the cost of construction
no cost increase would be associated with this modification

Analysis: A review of the standard proposed for inclusion in the code, ASTM C1822-2015, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P25-18

Public Hearing Results

Committee Action: **As Submitted**

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

Assembly Action: **None**

P25-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Dawn Anderson, representing self (gonedawning@yahoo.com); Dan Buuck, representing National Association of Home Builders (dbuuck@nahb.org); David Collins, representing the American Institute of Architects (dcollins@preview-group.com); Dominic Marinelli, representing United Spinal Association (DMarinelli@accessibility-services.com)requests Disapprove.

Commenter's Reason: Similar to ASME A122.18.9 address in P24-18, this new standard requires testing at 140 degrees Fahrenheit for 5 hours. What is the 'accessibility' justification for this temperature or this amount of time?
It is not clear what federal lawsuit the reason statement is talking about, but the only requirement is that the insulating cover shall not be "attached by cable tie fasteners, adhesive or adhesive tape" (Section 10.7) This standard also includes requirements for surface burning characteristics (12.1) and rate of burning (12.4). What is the 'accessibility' justification for these requirements? The reason statement says compliance with this standard will not increase cost. Is that based on the code already requires compliance with ASME A112.18.9? While the standard is not considered proprietary, how many products on the market can meet these requirements?

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction
The original proposal said adding this additional standard would not be a cost increase. Meeting this additional standard will be a cost increase. Disapproval of this additional standard will remove that increase.

P25-18

P27-18

IPC: 405.3.1

Proposed Change as Submitted

Proponent: Daniel Gleiberman, SLOAN, representing SLOAN (dangleib@gmail.com)

2018 International Plumbing Code

Revise as follows

405.3.1 Water closets, urinals, lavatories and bidets. A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction. ~~Where~~ For water closets, urinals, or bidets, where partitions or other obstructions do not separate adjacent fixtures, fixtures shall not be set closer than 30 inches (762 mm) center to center between adjacent fixtures. There shall be not less than a 21-inch (533 mm) clearance in front of a water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762 mm) in width and not less than 60 inches (1524 mm) in depth for floor-mounted water closets and not less than 30 inches (762 mm) in width and 56 inches (1422 mm) in depth for wall-hung water closets.

> **Exception:** An accessible children's water closet shall be set not closer than 12 inches (305 mm) from its center to the required partition or to the wall on one side.

Reason: This code section is a subsection of Section 405 entitled "Installation of Fixtures". This code change proposal clarifies that lavatories must be installed to meet the 15 inch separation from the center of the fixture to any obstruction.

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

P27-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The langauge is not clear as to what is trying to be accomplished. (Vote:13-0)

Assembly Action: **None**

P27-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (jbengineer@aol.com); Daniel Gleiberman (dangleib@gmail.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

405.3.1 Water closets, urinals, lavatories and bidets. A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction. ~~For water closets, urinals, or bidets, where~~ Where partitions or other obstructions do not separate adjacent ~~fixtures,~~ water closets, urinals, or bidets, the fixtures shall not be set closer than 30 inches (762 mm) center to center between adjacent fixtures or adjacent water closets, urinals, or bidets. There shall be not less than a 21-inch (533 mm) clearance in front of a water closet, urinal, lavatory or bidet to any wall, fixture or door. Water closet compartments shall be not less than 30 inches (762 mm) in width and not less than 60 inches (1524 mm) in depth for floor-mounted water closets and not less than 30 inches (762 mm) in width and 56 inches (1422 mm) in depth for wall-hung water closets.

Exception:
An accessible children's water closet shall be set not closer than 12 inches (305 mm) from its center to the required partition or to the wall on one side.

Commenter's Reason: I made a commitment to the Plumbing Code Committee that I would correct the proposal and bring it back as a Public Comment. The proponent has good intentions, but the wording was confusing. The sentences being modified was only intended to apply to water closets, bidets, and urinals. The modified text identifies that the requirements only apply to these three fixtures.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This is an editorial clean up of the code change. There is no cost of construction associated with the change.

P27-18

P29-18

IPC: 405.3.6

Proposed Change as Submitted

Proponent: Gary Schenk, City of SeaTac, WA, representing Washington Association of Building Officials (gschenk@ci.seatac.wa.us); Gary Lampella, City of Seatac WA, representing Washington Association of Building Officials TDC (garyl@nwcodeprofessionals.com)

2018 International Plumbing Code

Add new text as follows

405.3.6 Privacy. Public restrooms shall be visually screened from outside entry or exit doors to ensure user privacy within the restroom. This provision shall also apply where mirrors would compromise personal privacy.

Exception: Visual screening shall not be required for single-occupant toilet rooms with lockable doors.

Reason: Although this section currently has provisions for sidewall or partition privacy within the restrooms, it does not address privacy from viewing the user at the fixture from outside the restroom. It also addresses the placement of mirror reflection viewing from the outside.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a minor design consideration. It can be addressed at the design stage.

P29-18

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (Vote:7-6)

Assembly Action: **Disapproved**

P29-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Assembly Actionrequests Disapprove.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 60.7% (68) to 39.3% (44) by eligible members online during the period of May 9 - May 23, 2018.

Staff Analysis: Proposal G132-18 was heard by the IPC committee along with P29-18. Proposal G132 modifies the language in IBC Section [P]1209.3 to result in the same requirements that P29-18 is requiring. This public comment was created as a result of a successful floor motion for D. Approval of P29-18 will duplicate, in the IPC, the requirements that will be successfully added (by the consent agenda vote) to the IBC

P29-18

P35-18

IPC: 408.3, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 International Plumbing Code

Revise as follows

408.3 Bidet water temperature. The discharge water temperature from a bidet fitting shall be limited to not greater than 110°F (43°C). The water temperature shall be regulated by a water ~~temperature~~ heater conforming to ASSE 1084 or by a limiting device conforming to either ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.

Add new standard(s) follows

ASSE

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

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

Reason: A new standard, ASSE 1084, was developed for water heaters that limit the temperature of hot water similar to an ASSE1070 valve. The standard is comparable to ASSE 10710/ASME A112.1070/CSA B125.7. The water heater cannot produce a temperature of hot water exceeding 120° F. The water heater must be capable of shutting off the supply of hot water when the temperature exceeds the set limit. These water heaters may be installed in the close proximity of the fixtures they serve.

Cost Impact: The code change proposal will decrease the cost of construction
This option may lower the cost of an installation.

Analysis: A review of the standard proposed for inclusion in the code, ASSE 1084 2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P35-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The proposed standard is not yet complete. (Vote:14-0)

Assembly Action: **None**

P35-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: At the first hearing, the draft of ASSE 1084 was not submitted on time, nor was the standard complete. The standard has now been completed, hence the change should be approved as submitted.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The result of this change is options for the code user. As such, there is no construction cost impact.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standard ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

Public Comment 2:

Proponent: Conrad Jahrling, representing ASSE International (conrad.jahrling@asse-plumbing.org)requests As Submitted.

Commenter's Reason: As of July 16th, 2018
Status of ASSE 1084-2018: Currently finishing working group discussions. The performance of the device is designed to conform similarly to ASSE 1070 / ASME A112.1070 / CSA B125.70, except with only a cold water inlet. Projected date of completion is Oct 15th.

The ASSE standards development process after standards have completed the open working group is outlined as:

Ballot the ASSE PSC consensus body for 21 days.
Resolve comments between commenters, staff, and PSC chair.
Send to public comment with ANSI for 45-day review. Resolve comments between commenters, staff, and PSC chair.
Submit to ANSI for review and approval.
Publish.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
There are alternative devices being proposed to the currently described methods in the text.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standard ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

P35-18

P38-18 Part I

IBC: 202, 1109.5, 2902.7 (New)

Proposed Change as Submitted

Proponent: Jenifer Gilliland, City of Seattle, Washington, representing City of Seattle, Washington (jenifer.gilliland@seattle.gov)

THIS IS A 2 PART CODE CHANGE. PART I AND PART II WILL BE HEARD BY THE PLUMBING CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

2018 International Building Code

Add new definition as follows

WATER DISPENSER. A plumbing fixture that is manually controlled by the user for the purpose of dispensing potable drinking water into a receptacle such as a cup, glass or bottle. Such fixture is connected to the potable water distribution system of the premises. This definition includes a freestanding apparatus for the same purpose that is not connected to the potable water distribution system and that is supplied with potable water from a container, bottle or reservoir.

Revise as follows

1109.5 ~~Drinking~~ High and low drinking fountains. Where drinking fountains are provided on an exterior site, on a floor or within a secured area, the drinking fountains shall be provided in accordance with Sections 1109.5.1 and 1109.5.2.

1109.5.1 Minimum number. Not fewer than two drinking fountains shall be provided. One drinking fountain shall comply with the requirements for people who use a wheelchair and one drinking fountain shall comply with the requirements for standing persons.

Exceptions:

1. A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains.
2. Where drinking fountains are primarily for children's use, drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.

1109.5.2 More than the minimum number. Where more than the minimum number of drinking fountains specified in Section 1109.5.1 is provided, 50 percent of the total number of drinking fountains provided shall comply with the requirements for persons who use a wheelchair and 50 percent of the total number of drinking fountains provided shall comply with the requirements for standing persons.

Exceptions:

1. Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down, provided that the total number of drinking fountains complying with this section equals 100 percent of the drinking fountains.
2. Where drinking fountains are primarily for children’s use, drinking fountains for people using wheelchairs shall be permitted to comply with the children’s provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.

[P] 2902.6 Small occupancies. Drinking fountains shall not be required for an occupant load of 15 or fewer.

Add new text as follows

2902.7 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not be required in those restaurants. In other occupancies where more than two drinking fountains are required, water dispensers shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.

Reason: Reason for proposal 1:

It is important for both the building official and the plumbing inspector to fully understand the requirements for drinking fountains including when they can be eliminated, switched out, and when high/low drinking fountains are required. Currently, only a portion of the information is available in the IPC and IBC.

The IPC does not have language addressing two important points needed for accessible drinking fountains:

1) The IPC doesn't include the requirements found in the IBC that are based on where the fountain is being provided - per floor, per secure area, or outside.

2) The IPC doesn't address high/low requirements for three or more drinking fountains.

This proposal adds the relevant sections currently found in IBC to IPC. The changes to the language are editorial for coordination only.

There also appears to be a conflict between the IPC allowing half of the drinking fountains to be switched out starting at two drinking fountains, and the accessibility requirement requiring at least two. Adding "two or more" to the IPC Section 410.4 will eliminate that conflict. This information should be repeated in IBC Chapter 29 along with the information that small occupancies do not have to have drinking fountains.

Reason for proposal 2:

A freestanding apparatus should not be substituted for a drinking fountain. There is nothing to stop a building owner from discontinuing the service or removing the equipment.

Having access to drinking fountains where someone can get water or access to a water dispenser where someone can use their own cup or bottle is important for occupant's heath as well as helping our environment by reducing the number of plastic bottles going into the landfill. By eliminating the option to substitute a non-plumbed free standing apparatus containing a reservoir for a drinking fountain, we will also be saving the energy it would have taken to deliver the jugs or containers of water to supply the apparatus.

The water dispenser, which in many installations would be a water bottle filling station, could be plumbed as a separate fixture, combined with the traditional high-low drinking fountain in new equipment, or attached after-the-fact to existing drinking fountains.

Bibliography: [1] (Deirdre Hanners, Grand Canyon National Park's Environmental Specialist) https://www.nps.gov/grca/planyourvisit/refilling_stations.htm

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Cost for proposal 1 -

This is a coordination/clarification of existing requirements in the IBC and the IPC.

Cost for proposal 2 -

Where this option is chosen, a permanent fixture would need to be installed instead of allowing for a portable system. However, there are a variety of options to choose from so the cost to the building owner should be about the same.

Staff Note: In Part I, the intent is for the text in the IPC for the definition of water dispenser and Section 410.4 to be copied verbatim into the IBC as a new definition and new Section 2902.7. The Code Correlation Committee will decide,prior to publication of the codes, whether a scoping designation will be applied to this new definition and new section in the IBC. The title change of IBC Section 1109.5 is only editorial.

P38-18 Part I

Public Hearing Results

Committee Action: **As Submitted**

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

Assembly Action: **None**

P38-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: James Kendzel, representing American Supply Association (jkendzel@asa.net)requests As Modified by This Public Comment.

Modify as follows:

2018 International Building Code

DRINKING FOUNTAIN A plumbing fixture that is connected to the potable water distribution system and the drainage system. The fixture allows the user to obtain a drink directly from a stream of flowing water without the use of any accessories.

Commenter's Reason: The proposed modification is to add the definition of "drinking fountain" from the IPC into the IBC along with the definition for "water dispenser" which is being added to the IBC based on the current proposal. Both terms are used in the current language of the IBC and proposed new text to be added to the IBC in the proposal. The change does not alter the intent of the original proposal but provides a consistency in definition and assurance that the full intent of the IPC language, including applicable definitions, are incorporated into the IBC.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
No cost impact since there is no substantive change to the proposal being suggested but rather an incorporation of applicable definitions already existing in the IPC to ensure consistency.

P38-18 Part I

NOTE: P38-18 Part II DID NOT RECEIVE A PUBLIC COMMENT AND IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY

P38-18 Part II

IPC: 410.3 (New), [BE]410.3, 410.3.2(New), 410.4

Proposed Change as Submitted

Proponent: Jenifer Gilliland, City of Seattle, Washington, representing City of Seattle, Washington (jenifer.gilliland@seattle.gov)

2018 International Plumbing Code

SECTION 202 GENERAL DEFINITIONS

WATER DISPENSER. A plumbing fixture that is manually controlled by the user for the purpose of dispensing potable drinking water into a receptacle such as a cup, glass or bottle. Such fixture is connected to the potable water distribution system of the premises. This definition includes a freestanding apparatus for the same purpose that is not connected to the potable water distribution system and that is supplied with potable water from a container, bottle or reservoir.

SECTION 410 DRINKING FOUNTAINS

410.2 Small occupancies. Drinking fountains shall not be required for an occupant load of 15 or fewer.

Add new text as follows

410.3 High and low drinking fountains. Where drinking fountains are provided on an exterior site, on a floor or within a secured area, the drinking fountains shall be provided in accordance with Sections 410.3.1 and 410.3.2.

Revise as follows

[BE] ~~410.3~~ 410.3.1 ~~High and low drinking fountains~~ Minimum number. ~~Where drinking fountains are required, not~~ Not fewer than two drinking fountains shall be provided. One drinking fountain shall comply with the requirements for people who use a wheelchair and one drinking fountain shall comply with the requirements for standing persons.
Exceptions:

1. A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains.
2. Where drinking fountains are primarily for children's use, the drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.

Add new text as follows

410.3.2 More than the minimum number. Where more than the minimum number of drinking fountains specified in Section 1109.5.1 is provided, 50 percent of the total number of drinking fountains provided shall comply with the requirements for persons who use a wheelchair and 50 percent of the total number of drinking fountains provided shall comply with the requirements for standing persons.
Exceptions:

1.Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down, provided that the total number of drinking fountains complying with this section equals 100 percent of the drinking fountains.

2.Where drinking fountains are primarily for children's use, drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.

Revise as follows

410.4 Substitution. Where restaurants provide drinking water in a container free of charge, drinking fountains shall not

be required in those restaurants. In other occupancies where more than two drinking fountains are required, *water dispensers* shall be permitted to be substituted for not more than 50 percent of the required number of drinking fountains.

Reason: Reason for proposal 1:
It is important for both the building official and the plumbing inspector to fully understand the requirements for drinking fountains including when they can be eliminated, switched out, and when high/low drinking fountains are required. Currently, only a portion of the information is available in the IPC and IBC.

The IPC does not have language addressing two important points needed for accessible drinking fountains:

1) The IPC doesn't include the requirements found in the IBC that are based on where the fountain is being provided - per floor, per secure area, or outside.

2) The IPC doesn't address high/low requirements for three or more drinking fountains.

This proposal adds the relevant sections currently found in IBC to IPC. The changes to the language are editorial for coordination only.

There also appears to be a conflict between the IPC allowing half of the drinking fountains to be switched out starting at two drinking fountains, and the accessibility requirement requiring at least two. Adding "two or more" to the IPC Section 410.4 will eliminate that conflict. This information should be repeated in IBC Chapter 29 along with the information that small occupancies do not have to have drinking fountains.

Reason for proposal 2:

A freestanding apparatus should not be substituted for a drinking fountain. There is nothing to stop a building owner from discontinuing the service or removing the equipment.

Having access to drinking fountains where someone can get water or access to a water dispenser where someone can use their own cup or bottle is important for occupant's heath as well as helping our environment by reducing the number of plastic bottles going into the landfill. By eliminating the option to substitute a non-plumbed free standing apparatus containing a reservoir for a drinking fountain, we will also be saving the energy it would have taken to deliver the jugs or containers of water to supply the apparatus.

The water dispenser, which in many installations would be a water bottle filling station, could be plumbed as a separate fixture, combined with the traditional high-low drinking fountain in new equipment, or attached after-the-fact to existing drinking fountains.

Bibliography: [1] (Deirdre Hanners, Grand Canyon National Park's Environmental Specialist)
https://www.nps.gov/grca/planyourvisit/refilling_stations.htm

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Cost for proposal 1 -

This is a coordination/clarification of existing requirements in the IBC and the IPC.

Cost for proposal 2 -

Where this option is chosen, a permanent fixture would need to be installed instead of allowing for a portable system. However, there are a variety of options to choose from so the cost to the building owner should be about the same.

Staff note: In Part 2, the intent is for the text in the IBC Section 1109.5, 1109.5.1 and 1109.5.2 to be copied verbatim into the IPC as Sections 410.3, 410.3.1 and 410.3.2 . A [BE] is shown in front of the text to indicate this, however, code committee scoping will be officially determined at a later date. There is a revision to IPC Section 410.4.

P38-18 Part II

Public Hearing Results

Committee Action: **As Submitted**

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

Assembly Action: **None**

P38-18 Part II

P42-18

IPC: 411.3, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 International Plumbing Code

Revise as follows

411.3 Water supply. Where hot and cold water is supplied to an emergency shower or eyewash station, the temperature of the water supply shall only be controlled by a temperature actuated mixing valve complying with ASSE 1071. Where water is supplied directly to an emergency shower or eyewash station from a water heater, the water heater shall comply with ASSE 1085.

Add new standard(s) follows

ASSE

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

1085-2018:

Performance Requirements for Water Heaters for Emergency Equipment

Reason: A new standard, ASSE 1085, was developed for water heaters specifically designed for emergency fixtures. The standard is comparable to the valve standard, ASSE 1071. The water heater cannot produce a temperature of hot water exceeding 100° F. The water heater produces water within a minute at the tepid temperature range required for emergency fixtures. These water heaters are typically installed within the close proximity of the emergency fixture. This is an alternative methods for meeting the high flow rates for emergency showers without the need for adding to the hot water demand of the plumbing within the building.

Cost Impact: The code change proposal will decrease the cost of construction
The availability of more options to achieve code compliance usually results in lower construction costs.

Analysis: A review of the standard proposed for inclusion in the code, ASSE 1085-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P42-18

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: These water heating units are already being successfully used in the indicated application. The standard is necessary to control the manufacturing of these units. (Vote:8-6)

Assembly Action: **None**

P42-18

Individual Consideration Agenda

Public Comment 1:

Proponent: CP28 Administration.

Commenter's Reason: The administration of ICC Council Policy 28 (CP28) is not taking a position on this code change. This public comment is being submitted to bring a procedural requirement to the attention of the ICC voting membership. In accordance with Section 3.6.3.1.1 of ICC Council Policy 28 (partially reproduced below), the new referenced standard ASSE 1085-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.
(CP28) 3.6.3.1.1 Proposed New Standards. In order for a new standard to be considered for reference by the Code, such standard shall be submitted in at least a consensus draft form in accordance with Section 3.4. If the proposed new standard is not submitted in at least consensus draft form, the code change proposal shall be considered incomplete and shall not be processed. The code change proposal shall be considered at the Committee Action Hearing by the applicable code development committee responsible for the corresponding proposed changes to the code text. If the committee action at the Committee Action Hearing is either As Submitted or As Modified and the standard is not completed, the code change proposal shall automatically be placed on the Public Comment Agenda with the recommendation stating that in order for the public comment to be considered, the new standard shall be completed and readily available prior to the Public Comment Hearing

P42-18

P45-18 Part I

IPC: 412.3, 412.4, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Revise as follows

412.3 Individual shower valves. Individual shower and tub-shower combination valves shall be balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and shall be installed at the point of use. Shower and tub-shower combination valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C)~~, which shall be field adjusted. In-line thermostatic valves shall not be utilized for compliance with this section.~~. The means for regulating the maximum temperature shall be by one of following:

1 A field adjustment and setting of the maximum temperature limit means of the shower or tub-shower combination valve in accordance with the manufacturer's instructions.

2. A limiting device conforming to either ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.
3. A thermostatic mixing valve conforming to ASSE 1017.
4. A water heater conforming to ASSE 1082.
5 A water heater conforming to ASSE 1084.
6. A temperature actuated flow reduction device conforming to ASSE 1062.

412.4 Multiple (gang) showers. Multiple (gang) showers supplied with a single-tempered water supply pipe shall have the water supply for such showers controlled by an *approved* automatic temperature control mixing valve that conforms to ASSE 1069 or CSA B125.3, or each shower head shall be individually controlled by a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valve that ~~conforms to ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and is installed at the point of use. Such valves shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturers' instructions.~~complies with Section 412.3.

Add new standard(s) follows

ASSE

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

1082-18:

Performance Requirements for Water Heaters used as Temperature Control Devices for Hot Water Distribution Systems

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

Reason: The scald prevention requirements for a shower valve are by the requirement for a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves. The high temperature limit was originally added to protect children that play hot and cold while taking a shower. This was extended to protecting people who inadvertently turn up the temperature of the shower valve.
The current code only stipulates the setting of the limit stop on the fixture fitting or shower valve, however, other viable means are available for setting the maximum temperature. The other viable means are often superior to setting the limit stop on the fixture fitting.

When the limit stop is adjusted, it is based on the temperature setting of the water heater and the cold water temperature. If the cold water temperature drops, which happens in some areas during the winter months, the setting

temperature drops. If the water heater is increased in temperature, the setting temperature rises. This phenomena does not occur when other means are used to regulate the high temperature.

Section 412.7 already permits the use of a TARF complying with ASSE 1062 for controlling the water temperature discharging from a faucet. Hence, the identification of the standard in this section complements the requirements in Section 412.7.

A thermostatic mixing valve is an effective method of regulating the maximum temperature. The temperature is maintained within a few degrees depending on the flow rate. Scalding temperatures are in excess of this temperature. Other viable means of maintaining the water temperature to a maximum of 120° F are water heater meeting one of the two new standards.

The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

For Section 412.4, there is no need to repeat all of the requirements in Section 412.3. If an individual shower valve is installed in gang showers, the requirements of Section 412.3 automatically apply. The revision merely emphasizes this requirement.

The changes to the Residential Code will make the requirements consistent with the Plumbing Code.

Cost Impact: The code change proposal will decrease the cost of construction
Other options, which may be a lower cost, will be available for setting the maximum temperature.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P45-18 Part I

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Devices complying with ASSE 1017 and ASSE 1062 do not have the capability to protect against thermal shock. (Vote:11-3)

Assembly Action: **None**

P45-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: There was confusion regarding the application of the standards specified. Thermal shock protection is provided by the ASSE 1016/ASME A112.1016/CSA B125.16 shower valve. The remaining items merely are used to set the upper temperature limit. Section 412.7 already permits the use of an ASSE 1062 device for upper temperature limit protection. Hence, the Committee statement was inaccurate. The ASSE 1017 device is also only setting the upper temperature limit. That is permitted by the current code. If the maximum water temperature out of the shower valve is less than 120 degrees F, there is no adjustment necessary. The limitation of the hot water temperature is the ASSE 1017 valve.
It must be noted that NEITHER ASSE 1070/ASME A112.1070/CSA B125.70, ASSE 1017, ASSE 1082, ASSE 1084, nor ASSE 1062 are providing thermal shock or scald protection. These devices and water heater are providing upper temperature limits in a shower. There is no change to the protection required by an ASSE 1016/ASME A112.1016/CSA B125.16 shower valve.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change presents options to the code user. As such, there is no impact to the cost of construction.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018 and ASSE 1085-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

P45-18 Part I

P45-18 Part II

IRC: P2708.4, Chapter 44

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 International Residential Code

Revise as follows

P2708.4 Shower control valves. Individual shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance, thermostatic-mixing or combination pressure-balance/thermostatic-mixing valve types with a high limit stop in accordance with ASSE 1016/ASME A112.1016/CSA B125.16. ~~The high limit stop~~ A means shall be ~~set~~ provided to limit the water temperature to not greater than 120°F (49°C). ~~In-line thermostatic valves shall not be used for compliance with this section.~~ The means for regulating the maximum temperature shall be by one of the following:

1. A field adjustment and setting of the maximum temperature limit means of the shower or tub-shower combination valve in accordance with the manufacturer's instructions.
2. A limiting device conforming to either ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.
3. A thermostatic mixing valve conforming to ASSE 1017.
4. A water heater conforming to ASSE 1082.
5. A water heater conforming to ASSE 1084.
6. A temperature actuated flow reduction device conforming to ASSE 1062.

Add new standard(s) follows

ASSE

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

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

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Reason: The scald prevention requirements for a shower valve are by the requirement for a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves. The high temperature limit was originally added to protect children that play hot and cold while taking a shower. This was extended to protecting people who inadvertently turn up the temperature of the shower valve.
The current code only stipulates the setting of the limit stop on the fixture fitting or shower valve, however, other viable means are available for setting the maximum temperature. The other viable means are often superior to setting the limit stop on the fixture fitting.

When the limit stop is adjusted, it is based on the temperature setting of the water heater and the cold water temperature. If the cold water temperature drops, which happens in some areas during the winter months, the setting temperature drops. If the water heater is increased in temperature, the setting temperature rises. This phenomena does not occur when other means are used to regulate the high temperature.

Section 412.7 already permits the use of a TARF complying with ASSE 1062 for controlling the water temperature discharging from a faucet. Hence, the identification of the standard in this section complements the requirements in Section 412.7.

A thermostatic mixing valve is an effective method of regulating the maximum temperature. The temperature is maintained within a few degrees depending on the flow rate. Scalding temperatures are in excess of this temperature. Other viable means of maintaining the water temperature to a maximum of 120° F are water heater meeting one of the two new standards.

The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

For Section 412.4, there is no need to repeat all of the requirements in Section 412.3. If an individual shower valve is installed in gang showers, the requirements of Section 412.3 automatically apply. The revision merely emphasizes this requirement.

The changes to the Residential Code will make the requirements consistent with the Plumbing Code.

Cost Impact: The code change proposal will decrease the cost of construction
Other options, which may be a lower cost, will be available for setting the maximum temperature.

Analysis: A review of the standard proposed for inclusion in the code, ASSE 1082-2018 and ASSE 1084-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P45-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: ASSE 1082 is not yet completed. (Vote:10-0)

Assembly Action: **None**

P45-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: At the first hearing, ASSE 1082 was not completed. The standard has been finalized. Based on the original supporting statement, the change should be accepted.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change presents options to the code user. As such, there is no impact to the cost of construction.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018 and ASSE 1085-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

P45-18 Part II

P46-18 Part II

IRC: P2708.4

Proposed Change as Submitted

Proponent: Pennie Feehan, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

2018 International Residential Code

Revise as follows

P2708.4 Shower control valves. Individual shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance, thermostatic-mixing or combination pressure-balance/thermostatic-mixing valve types with a high limit stop in accordance with ASSE 1016/ASME A112.1016/CSA B125.16. Shower control valves shall be rated for hte flow rate of the installed showerhead. The high limit stop shall be set to limit the water temperature to not greater than 120°F (49°C). In-line thermostatic valves shall not be used for compliance with this section.

Reason: The thermal protection afforded by shower valves can be compromised if the flow rate of the showerhead is less than the flow rate for which the protective components of the valve have been designed. The proposed text is consistent with similar requirements found in ASSE 1016/ASME A112.1016/CSA B125.16 and ASME A112.18.1/CSA B125.1. As manufacturers continue to innovate with more water- and energy-efficient showerheads, this proposal is needed to ensure that new buildings built to the code will safely accommodate the showerheads selected by the designer or builder. Note that this language does not require that the showerhead itself have a flow rate of less than 2.5 gpm, but simply that the flow rating of the shower valve matches the flow rate of the installed showerhead to provide the scald and thermal shock protection required by the recognized standard when the valve model is tested.
Note that the 2012 Uniform Plumbing Code, Section 408.3, contains a similar requirement for 'matching' the valve and showerhead flow rates as follows:

"Showers and tub-shower combinations shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type that provide scald and thermal shock protection for the rated flow of the installed showerhead."

The IPC and IRC should be no less protective of health and safety than the UPC.

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 to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Adoption of this proposal will have no effect on the cost of construction, because it calls for the installation of showerheads and shower mixing valves that are compatible, rather than calling for the installation of a particular showerhead or shower control valve that might carry a cost premium. Care in specification and installation is required, not a special product or special installation technique. As noted above, the proposal does not require that the showerhead itself have a flow rate of less than 2.5 gpm, and compliance can be achieved with minimally compliant valves and showerheads. If an architect or builder chooses to install a more efficient showerhead with a lower flow rate, there are control valves available at moderate price points that can accommodate the builder's decision.

P46-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: In residential settings, for a variety of reasons, the builder-supplied original showerheads are often replaced by the building occupants soon after initial occupancy of the building. Knowing this fact, the proposed requirement doesn't effectively provide for any real added level of safety after these types of buildings are occupied. (Vote:5-4)

Assembly Action: **None**

P46-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie Feehan, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (pmgcac@iccsafe.org)requests As Submitted.

Commenter's Reason: The committee felt that there was no benefit in this safety requirement because the occupants would likely replace the originally installed showerhead. While that may be true, this can be said about any safety provision in the entire code. Homeowners can always undo, tamper with or eliminate any safety device or installation and that is completely out of the control of the code official and the builder. The builder makes sure that the properly rated shower head and control valve combination is installed and the code official inspects for such. The installation is safe when the owners move into the house. What happens to the shower head after that is beyond the control of the builder and code official. It is important for the code to state the proposed safety requirement for the initial installation, but is also important to advise those that change the controls and shower heads in the future. If the homeowner created a hazard by changing the original shower head, and an injury resulted, the code would be stating that the what the home owner did was a violation, thereby relieving the builder of liability.
The proposed text is necessary for safeguarding public health and safety, and is consistent with similar requirements found in industry standards (ASSE 1016/ASME A112.1016/CSA B125.16 and ASME A112.18.1/CSA B125.1). Furthermore, manufacturers are already marking control valve packaging to indicate the rated flow rate of the showerhead to be used and showerhead packaging to indicate the rated flow rate of the control valve to be used. Therefore, the requirement is enforceable.

This public comment is submitted by the ICC PMGCAC. 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 2017 and 2018 the PMGCAC has held one face-to-face meeting and 11 conference call meetings which included members of the committee as well as any interested party to discuss and debate the proposed changes and public comments. Related documentation and reports are posted on thePMGCAC website at: https://www.iccsafe.org/codes-tech-support/codes/code-development-process/pmg-code-action-committee-pmgcac/.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Adoption of this proposal will have no effect on the cost of construction, because it calls for the installation of showerheads and shower mixing valves that are compatible, rather than calling for the installation of a particular showerhead or shower control valve that might carry a cost premium. Care in specification and installation is required, not a special product or special installation technique. As noted above, the proposal does not require that the showerhead itself have a flow rate of less than 2.5 gpm, and compliance can be achieved with minimally compliant valves and showerheads. If an architect or builder chooses to install a more efficient showerhead with a lower flow rate, there are control valves available at moderate price points that can accommodate the builder's decision.

Public Comment 2:

Proponent: Ed Osann, representing Natural Resources Defense Council (eosann@nrdc.org)requests As Submitted.

Commenter's Reason: The IRC-Plumbing Committee erred by turning down this proposal even as the IPC Committee approved the same language. The proposal was offered by the PMG CAC to ensure that showers would be safely operated in the as-built condition, by ensuring that the rated flow of a shower mixing valve is adequate to provide thermal protection at the flow rate of the showerhead being installed. The IRC-Plumbing Committee strayed into speculation about after-occupancy changes in showerheads. But occupants can make many, many changes to a building in future years that might render it less safe or even unsafe, and yet the codes covering new construction and major renovation seek to

make new buildings as safe as reasonably possible. This provision addresses the need for a newly installed shower to operate safely. The fact that other steps may be needed to better inform consumers about shower safety does not negate in any way the value and purpose of this proposal as submitted -- as was concluded by the IPC Committee looking at the same proposal.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Adoption of this proposal will have no effect on the cost of construction, because it calls for the installation of showerheads and shower mixing valves that are compatible, rather than calling for the installation of a particular showerhead or shower control valve that might carry a cost premium. Care in specification and installation is required,not a special product or special installation technique.

P46-18 Part II

NOTE: P46-18 Part I DID NOT RECEIVE A PUBLIC COMMENT AND IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY

P46-18 Part I

IPC: 412.3, 412.4

Proposed Change as Submitted

Proponent: Pennie Feehan, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (PMGCAC@iccsafe.org)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Revise as follows

412.3 Individual shower valves. Individual shower and tubshower combination valves shall be balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and shall be installed at the point of use. Shower control valves shall be rated for the flow rate of the installed showerhead. Shower and tub-shower combination valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions. In-line thermostatic valves shall not be utilized for compliance with this section.

412.4 Multiple (gang) showers. Multiple (gang) showers supplied with a single-tempered water supply pipe shall have the water supply for such showers controlled by an *approved* automatic temperature control mixing valve that conforms to ASSE 1069 or CSA B125.3, or each shower head shall be individually controlled by a balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valve that conforms to ASSE 1016/ASME A112.1016/CSA B125.16 or ASME A112.18.1/CSA B125.1 and is installed at the point of use. Where a showerhead is individually controlled, shower control valves shall be rated for the flow rate of the installed showerhead. Such valves shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturers' instructions.

Reason: The thermal protection afforded by shower valves can be compromised if the flow rate of the showerhead is less than the flow rate for which the protective components of the valve have been designed. The proposed text is consistent with similar requirements found in ASSE 1016/ASME A112.1016/CSA B125.16 and ASME A112.18.1/CSA B125.1. As manufacturers continue to innovate with more water- and energy-efficient showerheads, this proposal is needed to ensure that new buildings built to the code will safely accommodate the showerheads selected by the designer or builder. Note that this language does not require that the showerhead itself have a flow rate of less than 2.5 gpm, but simply that the flow rating of the shower valve matches the flow rate of the installed showerhead to provide the scald and thermal shock protection required by the recognized standard when the valve model is tested.
Note that the 2012 Uniform Plumbing Code, Section 408.3, contains a similar requirement for 'matching' the valve and showerhead flow rates as follows:

"Showers and tub-shower combinations shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type that provide scald and thermal shock protection for the rated flow of the installed showerhead."

The IPC and IRC should be no less protective of health and safety than the UPC.

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 to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Adoption of this proposal will have no effect on the cost of construction, because it calls for the installation of showerheads and shower mixing valves that are compatible, rather than calling for the installation of a particular showerhead or shower control valve that might carry a cost premium. Care in specification and installation is required, not a special product or special installation technique. As noted above, the proposal does not require that the showerhead

itself have a flow rate of less than 2.5 gpm, and compliance can be achieved with minimally compliant valves and showerheads. If an architect or builder chooses to install a more efficient showerhead with a lower flow rate, there are control valves available at moderate price points that can accommodate the builder's decision.

P46-18 Part I

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: Showerhead and shower valve flow rates are already being coordinated when new shower valves are installed. (Vote:9-5)

Assembly Action: **None**

P46-18 Part I

P48-18 Part I

IPC: 412.5, Chapter 15

Proposed Change as Submitted

Proponent: Misty Guard, representing Bradley Corporation (Misty.Guard@bradleycorp.com)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Revise as follows

412.5 Bathtub and whirlpool bathtub valves. The *hot water* supplied to bathtubs and whirlpool bathtubs shall be limited to not greater than 120°F (49°C) by a water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 or by a water heater complying with ASSE 1082 or ASSE 1084, except where such protection is otherwise provided by a combination tub/shower valve in accordance with Section 412.3.

Add new standard(s) follows

ASSE

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

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

Reason: There are two new standards for water heaters, ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the currently listed water-temperature limiting device.
Water heaters complying with either one of these standards can provide tempered water within a range of a few degrees depending on the flow rate. The temperature range is similar to the allowable temperature range for an ASSE 1070/ASME A112.1070/CSA B125.70 device.The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

Bibliography: 1082-2017 Performance Requirements for Water Heaters used as Temperature Control Devices for Hot Water Distribution Systems 412.5
1084-2017 Performance Requirements for Water Heaters used as Temperature Limiting Devices 412.5

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.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P48-18 Part I

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: These devices are already being successfully used. Including a standard in the code will make these devices safer. (Vote:8-7, Chair voted)

Assembly Action: **None**

P48-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: CP28 Administration.

Commenter's Reason: The administration of ICC Council Policy 28 (CP28) is not taking a position on this code change. This public comment is being submitted to bring a procedural requirement to the attention of the ICC voting membership. In accordance with Section 3.6.3.1.1 of ICC Council Policy 28 (partially reproduced below), the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.
(CP28) 3.6.3.1.1 Proposed New Standards. In order for a new standard to be considered for reference by the Code, such standard shall be submitted in at least a consensus draft form in accordance with Section 3.4. If the proposed new standard is not submitted in at least consensus draft form, the code change proposal shall be considered incomplete and shall not be processed. The code change proposal shall be considered at the Committee Action Hearing by the applicable code development committee responsible for the corresponding proposed changes to the code text. If the committee action at the Committee Action Hearing is either As Submitted or As Modified and the standard is not completed, the code change proposal shall automatically be placed on the Public Comment Agenda with the recommendation stating that in order for the public comment to be considered, the new standard shall be completed and readily available prior to the Public Comment Hearing

P48-18 Part I

NOTE: P48-18 Part II DID NOT RECEIVE A PUBLIC COMMENT AND IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY

P48-18 Part II

IRC: P2713.3, Chapter 44

Proposed Change as Submitted

Proponent: Misty Guard, representing Bradley Corporation (Misty.Guard@bradleycorp.com)

2018 International Residential Code

Revise as follows

P2713.3 Bathtub and whirlpool bathtub valves. Hot water supplied to bathtubs and whirlpool bathtubs shall be limited to a temperature of not greater than 120°F (49°C) by a water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 or by a water heater complying with ASSE 1082 or ASSE 1084, except where such protection is otherwise provided by a combination tub/shower valve in accordance with Section P2708.4.

Add new standard(s) follows

ASSE

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

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

Reason: There are two new standards for water heaters, ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the currently listed water-temperature limiting device.
Water heaters complying with either one of these standards can provide tempered water within a range of a few degrees depending on the flow rate. The temperature range is similar to the allowable temperature range for an ASSE 1070/ASME A112.1070/CSA B125.70 device. The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

Bibliography: 1082-2017 Performance Requirements for Water Heaters used as Temperature Control Devices for Hot Water Distribution Systems P2713.3
1084-2017 Performance Requirements for Water Heaters used as Temperature Limiting Devices P2713.3

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.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P48-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: ASSE 1082 is not yet completed. ASSE 1084 was submitted only in draft form. (Vote:10-0)

Assembly Action: **None**

P48-18 Part II

P50-18 Part I

IPC: 412.5, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Revise as follows

412.5 Bathtub and whirlpool bathtub valves. The *hot water* supplied to bathtubs and whirlpool bathtubs shall be limited to not greater than 120°F (49°C) ~~by a~~ The water ~~temperature limiting device that conforms~~ temperature shall be regulated by one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3,
2. A thermostatic mixing valve conforming to ASSE 1017.
3. A water heater conforming to ASSE 1082.

4. A water heater conforming to ASSE 1084.

Exception: ~~except~~ Water temperature regulation by one of the items indicated in this section shall not be required where such regulation is ~~Where such protection~~ is ~~otherwise~~ provided by a combination tub/shower valve in accordance with Section 412.3.

Add new standard(s) follows

ASSE

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

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

Reason: The requirement for regulating the maximum temperature of water for bathtubs and whirlpool bathtub is a scald prevention requirement. The current code allows the use of a device complying with ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3. This change identifies other viable methods of controlling the temperature of the hot water. e identification of the standard in this section complements the requirements in Section 412.7.
A thermostatic mixing valve is an effective method of regulating the maximum temperature. The temperature is maintained within a few degrees depending on the flow rate. Scalding temperatures are in excess of this temperature. Other viable means of maintaining the water temperature to a maximum of 120° F are water heater meeting one of the two new standards.

The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

The change to the Residential Code will make the requirements consistent with the Plumbing Code.

Cost Impact: The code change proposal will decrease the cost of construction
The options may result in lower costs.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P50-18 Part I

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: It is known that ASSE 1017 valves have a problem with temperature creep. The ASSE 1082 standard does not address the potential for temperature creep. (Vote:10-4)

Assembly Action: **None**

P50-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

412.5 Bathtub and whirlpool bathtub valves. The *hot water* supplied to bathtubs and whirlpool bathtubs shall be limited to not greater than ~~120°F~~ 120 F (~~49°C~~49 C) The water temperature shall be regulated by one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3,
2. A ~~thermostatic mixing valve conforming to ASSE 1017.~~
~~3.~~ ~~A~~ water heater conforming to ASSE 1082.
~~4.~~3. A water heater conforming to ASSE 1084.

Exception: Water temperature regulation by one of the items indicated in this section shall not be required where such regulation is is provided by a combination tub/shower valve in accordance with Section 412.3.

Commenter's Reason: I pointed out during the first hearing that ASSE 1017 should have been deleted in a modification. Also, during the first hearing, ASSE 1084 had not been completed. The standards are now available.
The Committee statement mentions that ASSE 1082 provides no protection against creep. As I testified, a water heater being controlled for outlet temperature cannot have creep. The creep that occurs in an ASSE 1017 valve is related to improper adjustment of a recirculating system. Even with a recirculating system, a water heater cannot have creep. The outlet temperature is always within the allowable range of the set point.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change provides an option to the code users. As such, there is no impact to the cost of construction.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

P50-18 Part I

P50-18 Part II

IRC: P2713.3, Chapter 44

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 International Residential Code

Revise as follows

P2713.3 Bathtub and whirlpool bathtub valves. *Hot water* supplied to bathtubs and whirlpool bathtubs shall be limited to not greater than 120°F (49°C) ~~by a~~ The water ~~temperature limiting device that conforms~~ temperature shall be regulated by one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.
2. A thermostatic mixing valve conforming to ASSE 1017.
3. A water heater conforming to ASSE 1082.

4. A water heater conforming to ASSE 1084.

Exception: ~~except~~ Water temperature regulation by one of the items indicated in this section shall not be required where such regulation is ~~Where such protection~~ is ~~otherwise~~ provided by a combination tub/shower valve in accordance with Section P2708.4.

Add new standard(s) follows

ASSE

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

1082-2018:

Performance Requirements for Water Heaters used as Temperature Control Devices for Hot Water Distribution Systems

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

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Reason: The requirement for regulating the maximum temperature of water for bathtubs and whirlpool bathtub is a scald prevention requirement. The current code allows the use of a device complying with ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3. This change identifies other viable methods of controlling the temperature of the hot water. e identification of the standard in this section complements the requirements in Section 412.7.
A thermostatic mixing valve is an effective method of regulating the maximum temperature. The temperature is maintained within a few degrees depending on the flow rate. Scalding temperatures are in excess of this temperature. Other viable means of maintaining the water temperature to a maximum of 120° F are water heater meeting one of the two new standards.

The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

The change to the Residential Code will make the requirements consistent with the Plumbing Code.

Cost Impact: The code change proposal will decrease the cost of construction
The options may result in lower costs.

P50-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: ASSE 1082 is not yet completed. (Vote:10-0)

Assembly Action: **None**

P50-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Residential Code

P2713.3 Bathtub and whirlpool bathtub valves. *Hot water* supplied to bathtubs and whirlpool bathtubs shall be limited to not greater than ~~120°F~~ 120 F (~~49°C~~49 C) The water temperature shall be regulated by one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.
2. A ~~thermostatic mixing valve conforming to ASSE 1017.~~
~~3.~~ ~~A~~ water heater conforming to ASSE 1082.
~~4.~~3. A water heater conforming to ASSE 1084.

Exception: Water temperature regulation by one of the items indicated in this section shall not be required where such regulation is is provided by a combination tub/shower valve in accordance with Section P2708.4.

Commenter's Reason: During the first hearing, I indicated that ASSE 1082 was not yet complete. The standard has been finalized. Also during the first hearing, I indicated that based on the input I received that ASSE 1017 should be deleted. The modification deletes reference to ASSE 1017.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change provides an option to the code users. As such, there is no impact to the cost of construction.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

P50-18 Part II

P51-18

IPC: 412.10, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 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) ~~by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70.~~ . 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 thermostatic mixing valve conforming to ASSE 1017.
3. A water heater conforming to ASSE 1082.
4. A water heater conforming to ASSE 1084.
5. A temperature actuated flow reduction device conforming to ASSE 1062.

Add new standard(s) follows

ASSE

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

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

Reason: The scald prevention requirements for head shampoo sink faucets is similar to the upper limit requirement for shower valves. There other viable means are available for setting the maximum temperature besides a device complying with ASSE 1070/ASME A112.1070/CSA B125.70. The other viable means of meeting the high temperature limit. Section 412.7 already permits the use of a TARF complying with ASSE 1062 for controlling the water temperature discharging from a faucet. Hence, the identification of the standard in this section complements the requirements in Section 412.7.

A thermostatic mixing valve is an effective method of regulating the maximum temperature. The temperature is maintained within a few degrees depending on the flow rate. Scalding temperatures are in excess of this temperature. Other viable means of maintaining the water temperature to a maximum of 120° F are water heater meeting one of the two new standards.

The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

Cost Impact: The code change proposal will decrease the cost of construction
The available options could result in lower costs.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P51-18

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 thermostatic mixing valve conforming to ASSE 1017.~~

~~3.~~ 2. A water heater conforming to ASSE 1082.

~~4. A water heater conforming to ASSE 1084.~~

~~5.~~3. A temperature actuated flow reduction device conforming to ASSE 1062.

Committee Reason: For the Modification: ASSE 1084 is not yet completed and ASSE 1017 is not appropriate for the application.
For the Proposal: The Committee agreed with the published reason statement. (Vote:10-4)

Assembly Action: None

P51-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Conrad Jahrling, representing ASSE International (conrad.jahrling@asse-plumbing.org)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

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~~ 120 F (~~49°C~~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.

Commenter's Reason: A device that conforms with ASSE 1084 has the same temperature control output tolerances and requirements as a device that conforms with ASSE 1070 / ASME A112.1070 / CSA B125.70. The difference between the two is that an ASSE 1084 device adds heat to the system and only requires a cold water supply inlet. ASSE 1084 devices include electrical heater safety controls that are specific to point-of-use applications, whereas ASSE 1082 devices do not as they are for distribution.
As of July 16th, 2018:

ASSE 1082-2018 will be in public review until Sept 11. The performance of the device is designed to conform similarly to ASSE 1017, except with only a cold water inlet. Projected date of completion is Oct 15th.

ASSE 1084-2018 is currently finishing working group discussions. The performance of the device is designed to conform similarly to ASSE 1070 / ASME A112.1070 / CSA B125.70, except with only a cold water inlet. Projected date of completion is Oct 15th.

The ASSE standards development process after standards have completed the open working group is outlined as:

Ballot the ASSE PSC consensus body for 21 days.
Resolve comments between commenters, staff, and PSC chair.
Send to public comment with ANSI for 45-day review. Resolve comments between commenters, staff, and PSC chair.
Submit to ANSI for review and approval.
Publish.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
These devices are alternatives to current code-required methods. There is not a cost impact for including alternative methods in the code.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

Public Comment 2:

Proponent: CP28 Administration.

Commenter's Reason: The administration of ICC Council Policy 28 (CP28) is not taking a position on this code change. This public comment is being submitted to bring a procedural requirement to the attention of the ICC voting membership. In accordance with Section 3.6.3.1.1 of ICC Council Policy 28 (partially reproduced below), the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.
(CP28) 3.6.3.1.1 Proposed New Standards. In order for a new standard to be considered for reference by the Code, such standard shall be submitted in at least a consensus draft form in accordance with Section 3.4. If the proposed new standard is not submitted in at least consensus draft form, the code change proposal shall be considered incomplete and shall not be processed. The code change proposal shall be considered at the Committee Action Hearing by the applicable code development committee responsible for the corresponding proposed changes to the code text. If the committee action at the Committee Action Hearing is either As Submitted or As Modified and the standard is not completed, the code change proposal shall automatically be placed on the Public Comment Agenda with the recommendation stating that in order for the public comment to be considered, the new standard shall be completed and readily available prior to the Public Comment Hearing

P51-18

P53-18

IPC: 413.5

Proposed Change as Submitted

Proponent: James Richardson Jr, representing City of Columbus Ohio (jarichardson@columbus.gov); Robert Schutz, representing City of Columbus, OH (RJSchutz@columbus.gov)

2018 International Plumbing Code

Add new text as follows

413.5 Floor slope to floor and trench drains. The floor surface in the area or room served by a floor or trench drain shall have a slope to such drains at not less than one-fourth unit vertical in 12 units horizontal (2-percent slope).

Reason: This is long overdue. Everyone has seen this issue at some point in their life. There is some emergency situation and although there is an emergency floor drain/trench drain in the room or area, some water remains on the surface (sometimes several inches) due to the fact there is no real requirement for the area to have slope to the drain. In many cases the highest point in the room or area is actually the inlet to the floor drain/trench drain. It does seem odd that it is covered in great detail when we look at the requirements for a shower liner, however, a floor surface somehow doesn't matter. What many have failed to realize by overlooking this issue is that even though the floor drain/trench drain may be located in a concrete floor (with or without floor covering of some type), there are other portions of the building that can be greatly impacted. For instance, the walls that make up the room. Some assume these would be CMU units, but construction would allow for many other materials. If the walls were metal studs with drywall for instance, the metal studs could be subjected to deterioration from rust caused by the water that remained at the base of the wall because the surface was not sloped correctly. The drywall often becomes a breading ground for mold as well.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There should not be a cost impact related to this proposal.

P53-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This requirement might not apply in some applications. The slope could result in an excessive amount of fall in the floor surface. The topic of this proposal (sloping floors towards floor drains) would be better suited to be proposed and evaluated for inclusion into the IBC. (Vote:13-0)

Assembly Action: **None**

P53-18

Individual Consideration Agenda

Public Comment 1:

Proponent: James Richardson Jr, representing City of Columbus (jarichardson@columbus.gov)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

413.5 Floor slope to floor and trench drains. The floor surface in the area or room served by a floor or trench drain shall have a slope to such drains ~~at not less than one-fourth unit vertical in 12 units horizontal (2 percent slope).~~, with a minimum acceptable height difference between the highest point in the horizontal floor surface and the inlet to the fixture of 1/4 inch.

Commenter's Reason: Proponents reason statement.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
There will be no realized cost impact as this change only requires the prepared surface under the concrete to be sloped accordingly.

P53-18

P60-18

IPC: 419.5, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 International Plumbing Code

Revise as follows

419.5 Tempered water for public hand-washing facilities. *Tempered water* shall be delivered from lavatories and group wash fixtures located in public toilet facilities provided for customers, patrons and visitors. ~~Tempered~~ The tempered water shall be ~~delivered through an *approved* water-temperature-limiting device that conforms to~~ controlled by one of the following:

1. A temperature limiting device conforming to either ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.
2. A thermostatic mixing valve conforming to ASSE 1017.
3. A water heater conforming to ASSE 1082.
4. A water heater conforming to ASSE 1084.
5. A temperature actuated flow reduction device conforming to ASSE 1062.

Add new standard(s) follows

ASSE

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

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

Reason: The requirements for public lavatories is out of date based on the changes made to the standard. Previously, ASSE 1070 was considered a thermostatic mixing valve standard with safety features. The standard was revised to be a safety standard without performance requirements for thermostatic mixing. Some valves are adjustable, while others are not.
The requirement for tempered water for public lavatories is a comfort requirement as well as a scald prevention requirement. However, comfort overrides the safety requirement since tempered water is limited to a maximum temperature of 110° F. Scalding temperatures are in excess of this temperature. Other viable means of tempering water to 110° F or less are an ASSE 1017 valve or a water heater meeting one of the two new standards.

The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

The last device listed is a TARF complying with ASSE 1062. Section 412.7 already permits the use of these devices for controlling the water temperature discharging from a faucet. Hence, the identification of the standard in this section complements the requirements in Section 412.7.

Cost Impact: The code change proposal will decrease the cost of construction
The options may result in a lower installation cost.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P60-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The Committee prefers the language of P61-18. The ASSE 1017 valve is incorrect for the application. (Vote:14-0)

Assembly Action: **None**

P60-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting,, representing Bradley Corporation (jbengineer@aol.com)requests As Submitted.

Commenter's Reason: The Committee stated that they preferred P61-18, yet they rejected P61-18. For hand washing, any of the identified methods can provide comfortable water temperatures. Hand washing upper temperature was intended for comfort and easy adjustment of water temperature, not scald protection. The origins of the requirement are related to ICC A117.1 for handicapped lavatories. This requirement was expanded to all public lavatories. After the development of ASSE 1070 that standard was added to this section. However, there is no justification for such a mandate when other viable options are available. While an ASSE 1070 device works fine, there are other methods available. This change identifies all of the acceptable means of regulating hot water temperature.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction By adding options, the cost of construction will be lowered since other valves and devices are less expensive.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

P60-18

P64-18

IPC: 421.5.2

Proposed Change as Submitted

Proponent: James Richardson Jr, representing City of Columbus Ohio (jarichardson@columbus.gov); Robert Schutz, representing City of Columbus, OH (RJSchutz@columbus.gov)

2018 International Plumbing Code

Revise as follows

421.5.2 Shower ~~lining.~~linings. Floors under shower compartments, except where prefabricated receptors have been provided, shall be lined and made water tight utilizing material complying with Sections 421.5.2.1 through 421.5.2.6. Such liners shall turn up on all sides not less than 2 inches (51 mm) above the finished threshold level. Liners shall be recessed and fastened to an *approved* backing so as not to occupy the space required for wall covering, and shall not be nailed or perforated at any point less than 1 inch (25 mm) above the finished threshold. Liners shall be pitched one-fourth unit vertical in 12 units horizontal (2-percent slope) and shall be sloped toward the fixture drains and be securely fastened to the waste outlet at the seepage entrance, making a water-tight joint between the liner and the outlet. For showers that are designed with a zero height threshold, a trench drain shall be provided that runs 2 inches beyond the full width of the shower compartment opening on both sides. The trench drain shall have a flashing clamp and the shower liner material shall be securely fastened to the waste outlet at the seepage entrance, making a water-tight joint between the liner and the outlet. The shower liner shall also be required to extend 2 inches above the floor level and 1 inch beyond the edges of the trench drain. If for some reason the trench drain cannot be accommodated, the entire room the shower is located in shall be considered part of the shower compartment and provided with a liner for the entire floor surface.

The completed liner shall be tested in accordance with Section 312.9.

Exceptions:

1. Floor surfaces under shower heads provided for rinsing laid directly on the ground are not required to comply with this section.
2. Where a sheet-applied, load-bearing, bonded, waterproof membrane is installed as the shower lining, the membrane shall not be required to be recessed.

Reason: The plumbing code has not yet dealt with site built zero height threshold showers. These continue to be a problem for jurisdictions since the code provides no direction or parameters for how these should be constructed. We have seen installations end up causing substantial damage to a structure due to water migration between the floor covering and the sub floor. This proposal provides two possibilities which should result in adaquate protection for the structure.

Bibliography: See "Reason Statement"

Cost Impact: The code change proposal will increase the cost of construction
This will result in an increase in the cost of construction, but will also provide adaquate protection for the structure to prevent hidden damage.

P64-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The slope could be in excess of what ADA limitations are for shower floors. There are other methods that can be used to achieve the same result. Requiring this one method is too restrictive. (Vote:12-1)

Assembly Action: **None**

P64-18

Individual Consideration Agenda

Public Comment 1:

Proponent: James Richardson Jr, City of Columbus, representing City of Columbus Ohio (jarichardson@columbus.gov)requests As Submitted.

Commenter's Reason: This is an issue that needs addressed in the plumbing code. We have observed property after property that suffered significant damage because there is a lack of direction regarding the construction of a "barrier - free" or "zero-threshold" site built shower. Water always seeks its' own level and in doing so migrates horizontally. Often there is damage to not only the subfloor, but also to the base of the wall and the vertical studs.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction The increase in the cost of construction will be offset by the savings realized from preventing the damage in the first place.

P64-18

P65-18

IPC: 423.3, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 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 120°F (49°C) ~~by a~~ . The water ~~temperature-limiting device that conforms~~ temperature shall be regulated by one of the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.
2. A thermostatic mixing valve conforming to ASSE 1017.
3. A water heater conforming to ASSE 1082.
4. A water heater conforming to ASSE 1084.
5. A temperature actuated flow reduction device conforming to ASSE 1062.

Add new standard(s) follows

ASSE

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

1082-2018:

Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

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Reason: The requirement for regulating the maximum temperature of water for pedicure chairs having an integral foot bathtub, footbaths, and head shampoo sinks is a scald prevention requirement. The current code allows the use of a device complying with ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.
Section 412.7 already permits the use of a TARF complying with ASSE 1062 for controlling the water temperature discharging from a faucet. Hence, the identification of the standard in this section complements the requirements in Section 412.7.

A thermostatic mixing valve is an effective method of regulating the maximum temperature. The temperature is maintained within a few degrees depending on the flow rate. Scalding temperatures are in excess of this temperature. Other viable means of maintaining the water temperature to a maximum of 120° F are water heater meeting one of the two new standards.

The two new standard for water heaters are ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve.

Cost Impact: The code change proposal will decrease the cost of construction
The options may reduce the cost of an installation.

Analysis: A review of the standard proposed for inclusion in the code, ASSE 1082-2018 and ASSE 1084-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P65-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: There appears to be too many concerns of testifiers about the differences between ASSE 1017 and ASSE 1082 "devices". ASSE 1017 valves are not acceptable for point- of-use applications. The ASSE 1084 standard is not yet completed. (Vote:12-2)

Assembly Action: **None**

P65-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, representing Self (jbengineer@aol.com)requests As Submitted.

Commenter's Reason: Footbaths and pedicure baths are administered under the control of an attendant. The temperature is not adjusted by the person whose feet are being bathed. The upper temperature limit is not for anti-scald as implied. The upper temperature limit is to provide a means of warming the bath, at the same time, not having scalding water spray on the bather. Any one of the device listed can provide upper temperature limit on the hot water.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction This will present an option to the user. The valves being added as options cost less to purchase.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

P65-18

P66-18

IPC: 423.3, Chapter 15

Proposed Change as Submitted

Proponent: Misty Guard, representing Bradley Corporation (Misty.Guard@bradleycorp.com)

2018 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 120°F (49°C) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 or from a water heater complying with ASSE 1082 or ASSE 1084.

Add new standard(s) follows

ASSE

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

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

Reason: There are two new standards for water heaters, ASSE 1082 and ASSE 1084. These water heaters are equivalent to ASSE 1017 and ASSE 1070 respectively. As such, they have the capability of providing an equivalent level of performance as the currently listed water-temperature limiting device.
Water heaters complying with either one of these standards can provide tempered water within a range of a few degrees depending on the flow rate. The temperature range is similar to the allowable temperature range for an ASSE 1070/ASME A112.1070/CSA B125.70 device.

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.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P66-18

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 120°F (49°C) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 or from a water heater complying with ASSE 1082 ~~or ASSE 1084~~.

Committee Reason: For the Modification: The ASSE 1084 standard is not yet completed.
For the Proposal: Devices that comply with the requirements of ASSE 1082 are being successfully used. The Committee approved a previous proposal for these devices to be used for head shampoo sinks. (Vote:10-4)

Assembly Action: None

P66-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Conrad Jahrling, representing ASSE International (conrad.jahrling@asse-plumbing.org)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

423.3 Footbaths and pedicure baths. The water supplied to specialty plumbing fixtures, such as pedicure chairs having an integral foot bathtub and footbaths, shall be limited to not greater than 120 F (49 C) by a water-temperature-limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3 or from a water heater complying with ASSE ~~1082~~1084.

Commenter's Reason: This is a misapplication of ASSE 1082. The purpose of a device that conforms with ASSE 1082 is to supply hot or tempered water at a controlled output temperature for distribution. The tolerances for control are the same as the tolerances described in ASSE 1017 for mixing valves. Similarly, a device conforming to ASSE 1017 would not be appropriate in this application.
Conversely, a water heater that conforms to ASSE 1084 would be appropriate.

As of July 16th, 2018:

ASSE 1082-2018 will be in public review until Sept 11. The performance of the device is designed to conform similarly to ASSE 1017, except with only a cold water inlet. Projected date of completion is Oct 15th.

ASSE 1084-2018 is currently finishing working group discussions. The performance of the device is designed to conform similarly to ASSE 1070 / ASME A112.1070 / CSA B125.70, except with only a cold water inlet. Projected date of completion is Oct 15th.

The ASSE standards development process after standards have completed the open working group is outlined as:

Ballot the ASSE PSC consensus body for 21 days.
Resolve comments between commenters, staff, and PSC chair.
Send to public comment with ANSI for 45-day review. Resolve comments between commenters, staff, and PSC chair.
Submit to ANSI for review and approval.
Publish.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
These devices are alternatives to current code-required methods. There is not a cost impact for including alternative methods in the code.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-

2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

Public Comment 2:

Proponent: CP28 Administration.

Commenter's Reason: The administration of ICC Council Policy 28 (CP28) is not taking a position on this code change. This public comment is being submitted to bring a procedural requirement to the attention of the ICC voting membership. In accordance with Section 3.6.3.1.1 of ICC Council Policy 28 (partially reproduced below), the new referenced standards ASSE 1082-2018 and ASSE 1084-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

(CP28) 3.6.3.1.1 Proposed New Standards. In order for a new standard to be considered for reference by the Code, such standard shall be submitted in at least a consensus draft form in accordance with Section 3.4. If the proposed new standard is not submitted in at least consensus draft form, the code change proposal shall be considered incomplete and shall not be processed. The code change proposal shall be considered at the Committee Action Hearing by the applicable code development committee responsible for the corresponding proposed changes to the code text. If the committee action at the Committee Action Hearing is either As Submitted or As Modified and the standard is not completed, the code change proposal shall automatically be placed on the Public Comment Agenda with the recommendation stating that in order for the public comment to be considered, the new standard shall be completed and readily available prior to the Public Comment Hearing

P66-18

P70-18

IPC: 501.2

Proposed Change as Submitted

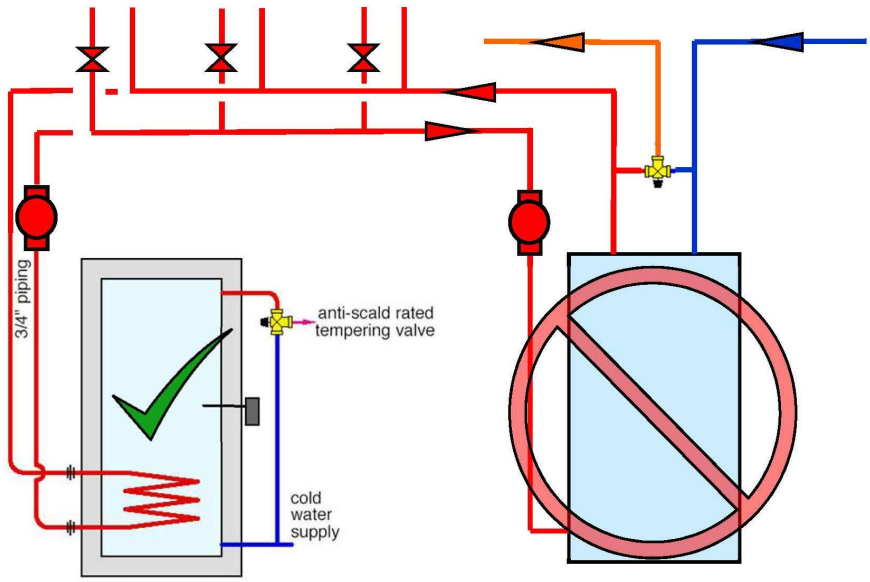
Proponent: Ronald George, representing Self (Ron@Plumb-TechLLC.com)

2018 International Plumbing Code

Revise as follows

501.2 Water heater as space heater. Where a combination potable water heating and space heating system requires water for space heating at temperatures greater than 140°F (60°C), a master thermostatic mixing valve complying with ASSE 1017 shall be provided to limit the water supplied to the potable *hot water* distribution system to a temperature of 140°F (60°C) or less. The ~~potability of the water~~ water for the space heating system shall be ~~maintained throughout the system.~~separated from the potable water system by use of a double wall heat exchanger.

Reason: This code change still allows a single heating appliance to provide both the heating and domestic hot water for a building, however it requires a heat exchanger to separate the two fluid systems. This is because heating hot water systems can sit idle for up to 8 or 9 months per year in southern climates. This causes the water to sit stagnate for many months when the thermostat does not call for heat. This stagnant period is when bacteria grows in a biofilm to very high numbers until the thermostat calls for heat. Then the bacteria is pumped into the water heater where it is transmitted to people from showers and other aerosolizing fixtures. The potential for Legionellosis or Legionnaires' disease is very high. The control valve or zone circulating pump remains off and allows water treatment chemicals to dissipate and bacteria can growth to very high levels in an uncirculated heating circuit. In systems where they cycle the zone valve or circulating pump, it wastes energy and overheats the spaces during summer months. There are other issues that are outlined below.
Combined systems require someone very familiar with how both systems are supposed to operate to properly operate and maintain the system. Proper maintenance of the system can be a comfort or Legionella bacteria growth issue when the temperatures are low and a serious safety and scald issue when temperatures are high. A combined system is a hybrid system that utilizes a boiler or boilers to heat water for heating the building environment and it uses boiler water to heat the domestic hot water for bathing, washing and cleaning uses. There are two applications for these combined systems. One application is heating the building environment with heating hot water which generally needs to be at a very high temperature around 180F to 210F without using oversized heating coils. The other application is for bathing, showering and domestic hot water uses which generally use a lower temperature around 85F to 120F. If the water gets too hot, there are scalding dangers, so proper controls (thermostatic mixing valves) are very important for these types of systems. I have been investigating scald incidents with combined systems since the mid-1990s and I have seen a significant number of these combined systems involved in scald litigation cases because these systems are generally not designed, installed, operated or maintained properly. The following is a list of problems or pitfalls that I have found over the years that are related to combined heating hot water and domestic hot water systems.



A combination Boiler/Water heater should be configured as shown on the left to keep from having domestic hot water sitting stagnant in heating coils and a heating circuit for months during non-heating months. The Boiler/Water heater on the right creates a large dead leg which contributes to Legionella Bacteria growth during non-heating season months. The first call for heat in the fall doses the hot water tank with a high concentration of bacteria from the dead leg.

Codes: There is very little code language on Combines heating hot water and domestic hot water systems. There are only two plumbing code sections in the model codes that mention these combined systems and they give important, but often overlooked requirements. One section calls for the piping and components in a combined system to be approved for use in potable water systems. The other code section calls for a thermostatic mixing valve if the system temperature exceeds 140 degrees Fahrenheit.

There are many more issues that need to be addressed to have a safe and properly designed system. If you can avoid these pitfalls you will have a much safer system:

Pitfall Number 1: Open System vs Closed System "Open systems" are systems with domestic hot water flowing from the city water supply through the heating hot water system components such as pumps, control valves and heating coils. Open systems introduce a lot of oxygen and minerals into the heating coil of the boiler and can cause corrosion and scale build-up issues on heating surfaces. Open systems often have scale build-up on the boiler heating surfaces in hard water areas. High Flue gas temperatures are a sign of scale build-up which minimizes heat transfer into the water and therefore the flue temperatures rise. "Closed Systems" are systems with a double wall heat exchanger separating the fluid of the heating hot water system and the domestic hot water. The boiler loop can be chemically treated and mineral build-up on heating surfaces is minimized. Closed loop systems generally require a double wall heat exchanger when boiler chemicals are used. Open systems provide a significant challenge because the fluid in the system must be potable water and it is difficult to circulate domestic hot water through many hydronic components without having scale, corrosion, build-up of air pockets and oxidation problems. Most hydronic systems have pumps, valves, coils and components that are not approved for drinking water service. Closed systems allow the heating hot water to be chemically treated to prevent corrosion and scale build-up on heating surfaces. Closed hydronic heating systems are the preferred type of combined systems because it eliminates a lot of opportunities for systems problems. There are water heaters with hot water coils in the tank that can be used for this application or a plate and frame or shell and tube heat exchanger can be used for this application. Open systems often see corrosion problems in the components that are not compatible for domestic water systems.

Pitfall Number 2: System Operating Temperatures The next challenge is with the system operating temperatures. Heating hot water systems are generally designed to operate between 180 degrees Fahrenheit and 210 degrees Fahrenheit. Domestic hot water systems are designed to operate between 85 degrees Fahrenheit for the lowest temperature of tempered water to 140 degrees Fahrenheit the highest hot water temperature for kitchens or laundries. "Tempered Water" is water having a temperature range between 85°F (29°C) and 110°F (43°C). "Hot Water" is water at a temperature greater than or equal to 110°F (43°C) and generally domestic hot water for bathing and showering is limited to a maximum of 120 degrees Fahrenheit in code language related to showers and bathtub facilities. Domestic hot water for dishwashing and laundries can be higher. Generally, domestic hot water systems operate at a maximum of 140 degrees Fahrenheit and heating hot water Systems operate best around 190 to 200 degrees Fahrenheit. If the

combined-open heating hot water system is set to 120 degrees F the building will be cold in winter months because there will not be enough heat coming out of the heating units. If the system temperature is set to a higher temperature to satisfy the heating coils or baseboard heater requirements then there is a significant scald risk on the domestic hot water side of the system unless thermostatic mixing valves are used to limit hot water temperatures.

Pitfall Number 3 - Not including all of the required components in the combined systems A combined system has many components that are required for it to operate properly. If all of the components are not installed in the proper location, then the system will experience problems. These components include but are not limited to: The boiler, and expansion tank, isolation valves, unions, dielectric waterways, circulating pumps, air eliminators or air vents, control valves, relief valves, balancing valves, heating coils, fin tube radiators, thermostats, pressure gauges, temperature gauges, flushing connections, plumbing fixtures, drains, etc. All of these components must work in concert and be designed to work together as a system. If any one or several of the components are not installed, or if they are undersized, adjusted or installed improperly the problems and safety issues can occur.

Pitfall Number 4 - Seasonal Pumping and Pump Sizing In large centrally piped systems, when the winter heating season occurs all of the components in a combined heating hot water and domestic hot water system will require a simultaneous peak demand in the morning when it is showering time. So the circulating pump must be sized for the simultaneous peak heating and showering loads. During the winter months, it does not make sense to circulate a large quantity of water, so often I see a smaller circulating pump that is piped around the large circulating pump so it can be used in the winter months when the large circulators are not needed for building heating. This creates a large dead leg in the hot water piping where Legionellae bacteria can grow when the heating hot water pumps are shut down.

Pitfall Number 5 - Dead legs During the summer months the fan coil units and branches to baseboard heating units are shut off with a solenoid valve or the circulating pump on these branches does not run all summer long. It is not unusual for heating system to sit idle for over six months in southern climates. When the first call for heating is made there is usually a slug of brackish and foul tasting water that is high in debris, metals and bacteria content. Combined systems are by design creating very large dead legs which is a plumbing code violation in many plumbing codes. Controls on combined systems need to incorporate a periodic flushing of the zones by operating the solenoid valves and circulators on each zone on at least a bi-weekly basis if not more often. Chlorine dissipates in the domestic water over time and when heated. So dead legs are more susceptible to bacteria growth. In combined systems where a significant portion of the system is used seasonally for heating and the remainder of the system is being used year round for domestic hot water, combined systems are open systems that are susceptible to bacteria growth in stagnant sections of heating coil piping. Heating coils in the summer season are an area with huge potential for bacterial amplification when hydronic systems are coupled with domestic hot water systems and there is no physical barrier or heat exchanger to separate the fluids between the two systems.

Pitfall Number 6 - Peak load problems - Space heating and Shower loads simultaneously The early morning is the generally coldest time of day and it is also when guests at a hotel or an apartment building or condominium take their morning showers. Equipment, piping, pumps and valves must be sized to handle this simultaneous peak load. If the heating coils, pipe and pump equipment is not sized big enough the temperature of the space will drop and the shower water temperature will drop to an uncomfortable temperature. Either condition is likely to result in call and complaints about water temperatures or space temperatures being too low.

Pitfall Number 7 - Sizing Sizing problems can arise when engineers, owners or contractors try to be thrifty and save a few bucks by rounding down on their peak load calculations and downsizing pumps, piping, valves or coils. When this happens, you can bet the maintenance department phone will be ringing off the hook with complaints of spaces being too cold or not enough hot water for a shower during cold weather conditions. The maintenance men usually do what comes natural when they receive a call of not enough heat, they go to the boiler and turn the temperature up. When someone is scalded they always claim they never touched the thermostat. Turning up the temperature will not cause problems for the heating coils, but it does significantly increase the risk of scalding if the maintenance man does no go around and re-adjust all of the maximum temperature limit stops in the showers and tub/shower valves. If the shower has an old two-handle or single handle non-compensating type shower valve that cannot compensate for changes in incoming temperature or pressure, then the risk of scalding is even greater. The best solution is to have a Thermostatic mixing valve on the hot water supply to the bathing and washing fixtures to limit the hot water to a safe temperature. If the hot water and heating water piping are still separated, and the system uses one boiler then a temperature actuated master thermostatic mixing valve conforming to ASSE 1017 or the appropriate CSA B-125 mixing valve can be located at the water heater to lower the hot water to a safe delivery temperature. If the combined system utilizes he same piping for heating hot water and domestic hot water then, a temperature limiting valve conforming to ASSE 1070 should be used in-line to mix cold water with hot water to provide a safe temperature of hot water for bathing or showering fixtures locally.

Pitfall Number 8 - Maintenance The main problem with a combined system is the system includes components and controls for two different mechanical trade disciplines. Often if there is a service call on one of these systems, the service technician may only be familiar with one system or the other. If the system was designed with a specific operating temperature it is not uncommon for a service tech familiar with only one system to set the temperature of the system to what he is accustomed to setting the temperature to. There are also many components in the system that

one trade or the other may be unfamiliar with. For example in one case the owner called an HVAC technician to work on his combined system. The HVAC technician was used to setting hydronic system for building heating at 190 to 200 degrees Fahrenheit. The technician set the temperature to 190 degrees and later a woman was scalded when she got in her shower. The HVAC technician did not know about he needed to reset the maximum temperature limit stop on all of the ASSE 1016 shower valves when he readjusted the boiler set point temperature. There are maintenance technicians that are trained and fully capable of working on combined systems, but they would need to have the design drawings, design operating temperatures and sequence of operations in order to properly maintain the system.

Pitfall Number 9 – Cast Iron Boiler on an Open System I have seen Cast iron boilers used on an open combined heating hot water and domestic hot water system. Cast iron boilers do not perform well with open systems because of the large quantities of water that introduces oxygen and minerals which cause rust stains, oxidation and fouling of the heating surfaces. This mistake does not take long to find because of the rust stains that appear in the sinks, bathtubs & showers. Cast iron boiler can work nicely, but they must have a separate closed loop of boiler water that is treated with corrosion inhibitors and other boiler chemicals as needed. The boiler water can then be piped to a coil in a hot water tank or to a heat exchanger to provide domestic hot water.

Pitfall Number 10 - No Hot Water Tank with Copper Fin Tube Boilers I have seen installation where someone thought they could save a few bucks by eliminating the storage tank and using the heating hot water main as the storage tank. This does not work in motels, hotels, apartment buildings and condos with large peak loads. In facilities like these there needs to be a stored volume of water ready for use in a dump load such as a morning shower period. Copper fin-tube boilers can only raise the temperature of the water 20 – 40 degrees Fahrenheit as the water flows through the boiler. If the water flows too slow, through the boiler, it will scale up and if the water flows too fast (in excess of five feet per second) the copper will erode away. These types of boilers work fine, the just need to have a storage tank for plumbing applications with a dump load. In heating applications the BTU input is matched to the heating load calculations and the system works fine. In a large domestic hot water or a combined heating hot water/domestic hot water system, copper fin-tube boilers should have an adjacent storage tank in order to work properly. If there is no storage tank, the system temperatures will drop off drastically during peak winter showering and building heating periods. The usual result is the maintenance personnel turn up the temperature and higher temperatures increase the risk of scalding.

Pitfall Number 11 - No Thermal Expansion Tank/Proper Thermal Expansion Tank Materials All heating hot water system and domestic hot water systems must have a thermal expansion tank. The thermal expansion tank should be sized for a system start-up from ambient to hot. Another problem I have encountered with these combined systems is usage of a hydronic expansion tank on a combined system. If the same water flows through the coils and to the plumbing fixtures, the system must have a thermal expansion tank rated for use in a potable water system. If the system has one boiler and two separate piping systems with a heat exchanger each piping system should have a thermal expansion tank.

Pitfall Number 12 - Scalding Injuries & Deaths Many designers, contractors and owners forget there are lives at stake when they design and build the combined heating hot water and domestic hot water systems. People have been scalded to death and people have been seriously injured when the systems are not designed, installed or maintained properly. This is more than just a savings on first-cost of an installation, it is a system that warrants serious attention because the public's safety is at stake. A properly sized and located thermostatic mixing valve conforming to ASSE 1017 or ASSE 1070 should be located in the combined system in accordance with the scoping requirements for each type of valve to prevent scalding. At shower locations an ASSE 1016 valve should be used and it should be properly set by the installer and/or the maintenance personnel to limit the maximum outlet temperature to 120 F or less.

Pitfall Number 13 - Litigation Combined systems are susceptible to problems. Problems can lead to injuries and injuries can lead to litigation. If an open combined heating hot water and domestic hot water system cannot be properly maintained for the entire life of the system, don't design it, don't install it or don't request that it be installed because problems will arise. Combined systems require an extensive amount of work and oversight by a person with knowledge of both the heating water requirements and domestic hot water requirements to make sure the system works properly and to make sure someone does not get injured. You must document everything when working on a combined system because when someone gets injured, everyone will be named in the lawsuit.

Pitfall Number 14 – Code Requirements for Thermostatic Mixing Valves The 2009 International Plumbing Code has the following Language dealing with combined systems: 501.2 Water heater as space heater. Where a combination potable water heating and space heating system requires water for space heating at temperatures higher than 140°F (60°C), a master thermostatic mixing valve complying with ASSE 1017 shall be provided to limit the water supplied to the potable hot water distribution system to a temperature of 140°F (60°C) or less. The potability of the water shall be maintained throughout the system. The above code language limits the domestic hot water system to 140 degrees Fahrenheit, and in other code sections the temperature for showers and tub/shower combination units is limited to 120 degrees Fahrenheit. The 2009 International Plumbing code also has the following language addressing maximum water temperatures for instantaneous water heaters: 501.6 Water temperature control in piping from tankless heaters. The temperature of water from tankless water heaters shall be a maximum of 140°F (60°C) when intended for domestic uses. This provision shall not supersede the requirement for protective shower valves in accordance with Section 424.3.

Pitfall Number 15 - Engineered System vs Value Engineered systems I have seen where a value engineering option was offered by a contractor to combine the domestic hot water system with the heating hot water system. This was not a value to the owner and it was not engineered. During the evaluation process the owner decided to allow the contractor to combine the systems without the contractor providing engineered drawings. This decision gave the contractor the ability to use whatever he wanted to use since there were no engineered drawings. The owner got a system that did not work, and had black brackish water flushed out of the dead legs every fall when the heating system was turned on and the stagnant water was circulated through the domestic water piping. I submitted a report almost 200 pages long documenting the many problems in that system.

Pitfall Number 16 - Pipe Materials I have seen where a pipe material cost cutting option that was labeled as a value engineering option was given by a contractor. The option was accepted and the contractor simply eliminated the domestic hot water system and changed the hydronic system from black steel to galvanized steel piping. This was in a condominium building that had about 500 condos that sold in the neighborhood of 1 million dollars each. The galvanized pipe started to rust significantly within two years of service and rust stains were significant in all fixtures. The seasonal dead legs from the heating coils allowed rust barnacles to form until the first call for heat. When the flow in these dead leg branches would resume on the first call for heat in the fall it would flush rust, debris and iron oxide and stagnant water into the strainers of the control valves and into the domestic water system. Galvanized steel pipe should never be used on a domestic hot water system because domestic hot water in an open system connected to the city water main introduces a large quantity of oxygenated water into the system and causes rust. Oxygenated water will cause significant corrosion in ferrous metals such as black steel and galvanized pipe. All components of a combined system should be copper or another code approved non-ferrous material for domestic hot water service if they are in contact with the city water supply. Another thing I often see is iron valves installed in these combined systems. This is usually the result of a heating contractor installing or performing maintenance on the combined system and it is usually the result of the contractor not being familiar with the requirements in the code for all components to be all bronze and/or approved for domestic water use.

Pitfall Number 17 - Pumps When sizing pumps for a combined system there should be two separate systems. The closed system should have large circulating pumps designed for the heating hot water flows. The open system should have small circulator pumps to maintain hot water to the farthest fixture. It is also a good idea to split the load into two and use two smaller pumps to allow for some redundancy and allow for one pump to be maintained while the other is in service. It's a good idea to do this with the boilers also to provide some redundancy. The hydronic system should be a closed loop that can use large ductile iron bodied pumps. The domestic water system is an open system and should have an all bronze circulator. I have seen combined systems where it was an open system with large ductile iron pumps in the main piping before the boilers to provide an adequate flow of heating hot water in the winter months. Then because they did not want to run the large pumps just to maintain the domestic hot water temperature at the end of the system, a small bronze circulator was installed on a branch off of the main with check valves to prevent short circuiting the flow through the larger pumps. The problem with an open system is when the large pumps are shut down for sometimes over 6 months the pumps, and all hydronic circuits to heating coils and baseboard heaters become dead legs in the piping system. Dead legs are places where bacteria like Legionellae can grow and thrive. This is why there should be a separate closed piping circuit for the heating hot water system piping.

Pitfall Number 18 - Corrosion Ferrous piping in a domestic hot water system is not advisable. Although galvanized pipe is allowed by code for domestic hot water systems, it should never be used in a domestic hot water system if you intend for the building systems to last more than a couple of years. Hot water tends to accelerate corrosion in galvanized piping systems. All domestic hot water piping should be copper or another approved non-ferrous material. Another problem with combined systems is the use of large cast iron and ductile iron hydronic heating circulating pumps that are installed in combined systems that were not approved for domestic water systems. I have seen galvanized steel pipes and even black steel pipe nipples used in domestic hot water systems. When the systems were first turned on in the fall large slugs of iron oxide laden water is forced into the domestic hot water distribution system. This generally results in sinks and bathtubs filled with black and orange rusty looking water until the entire system get flushed out significantly. The ferrous materials in the combined system typically lead to other problems with plugged strainers on control valves and other components. The iron oxide can also provide a surface for bacteria to grow.

Pitfall Number 19 - Corrosion inhibitors and other boiler water treatment chemicals I visited one building on the east coast where the combined system consisted of 8 inch galvanized water pipes. The galvanized pipes were corroding to the point where the hot water was very cloudy and orange. The building maintenance personnel chose to add an injection pump to inject chemicals into the domestic water main entering the building to raise the PH of the water and to intentionally build up a layer of scale inside the piping to minimize the amount of corrosion in the galvanized piping. The problem was the scale also formed on the heating surfaces and in the control valves causing them to fail. Upon inspection of the barrel of chemicals being injected into the water supply there were warning labels that stated the materials were toxic to humans. I reported this to the building owner to correct the situation immediately. This was another case of a heating contractor working on a plumbing system and not being familiar with plumbing code requirements. The solution he came up with would be a possible option for a hydronic system, but in a domestic water system that was a code violation and a health and safety issue.

Pitfall Number 20 - Loss of Both Systems When There is a Problem Another problem with combined systems is when there is a problem with a combined system that causes the system to shut down, both the domestic hot water system and the heating hot water system is out of service. If it is a boiler problem or another major problem the entire building could be without both systems for a long period of time. Combined system should have separate piping loops and redundant equipment to allow for some usage if one system or the other requires service.

Pitfall Number 21 – Legionellae Bacteria A research report in 1988 authored by Al Steele who was the president of the ASPE Research foundation at the time recommended storing domestic hot water between 135 degrees Fahrenheit and 140 degrees Fahrenheit to kill Legionellae bacteria and utilizing a thermostatic mixing valve to mix the hot water down to a safe delivery temperature below 120 degrees Fahrenheit to minimize sccalding. The higher storage temperature around 140 degrees Fahrenheit was suggested because it is above the temperatures where Legionella bacteria can survive and multiply. With a storage temperature of 140 degrees Fahrenheit the Legionellae bacteria will die within 32 minutes.

Table -1 Legionellae Bacteria Growth and Disinfection Temperature Chart.

158 F and above F (70 C +): Legionellae Bacteria Disinfection range.

At 151 Degrees F (66 Degrees C): Legionellae die within 2 minutes.

At 140 Degrees F (60 Degrees C): Legionellae die within 32 minutes.

At 135 Degrees F (57.5 Degrees C) Legionellae die within 2 hours.

At 131 Degrees F (55 Degrees C): Legionellae die within 5 to 6 hours.

Above 122 Degrees F (50 Degrees C): They can survive but do not multiply.

95 to 115 Degrees F(35 to 46 Degrees C): Ideal Legionellae Bacteria growth range.

68 to 122 Degrees F (20 to 50 Degrees C): Legionellae Bacteria growth range.

Below 68 Degrees F (20 Degrees C): Legionellae can survive but are dormant.

The Legionellae bacteria cannot survive water temperatures above 131 degrees Fahrenheit (55 Degrees C) for more than five or six hours. The bacteria die instantly at temperatures above 158 degrees F (70 degrees C). General protection against the bacteria can be achieved by designing an operating water temperature of at least 140 degrees F (60 degrees C) or higher. As temperatures increase, so does the risk of scalding.

For system water temperatures below 140 Degrees F (60 Degrees C) special provisions are necessary to allow for cleaning and chemical treatment procedures for addressing the Legionellae Bacteria in the Domestic Hot Water System. Given a storage temperature of 140 degrees Fahrenheit that should be high enough to protect the water heater from the bacteria, but in open systems with Legionellae bacteria in the municipal water supply, it would continually re-seed the potable hot water system with high dosages of potentially Legionellae bacteria infested water. This is another reason why combined systems should have a closed loop for the heating hot water system.

Pitfall Number 22 – Leakage of Boiler Water. When boiler water is at a higher temperature than 140 degrees Fahrenheit, (180 to 210 degrees Fahrenheit) and it is allowed to leak through a faulty zone valve or solenoid valve if there is debris in the line or if the boiler water is allowed to flow by gravity circulation through a circulating pump that is de-energized, there is the potential for overheating the domestic hot water. In these cases a system can have a thermostat set to de-energize the circulating pumps or close the solenoid valve and if they leak, the domestic hot water can rise above the set point to a temperature close to the boiler water temperature. A thermostat that controls a solenoid valve or circulating pumps on the water heater should never be used to control the temperature in a domestic hot water system because thermostats allow too much of a temperature variation from when it senses the water to turn on or off the pump or solenoid valve and there is potential for leakage and temperature creep. The best way to address this is to provide a thermostatic mixing valve that conforms to ASSE 1017 on the domestic hot water line coming from the hot water tank to provide a safe hot water distribution temperature. If you are considering a combined system, avoiding these pitfalls listed above should help keep your building warm and the occupants in a safe temperature of hot water. If you don't avoid these pitfalls you could find yourself in hot water. Another option would be to keep life simple and keep the systems separate. Then you will not have to worry about someone coming along later and messing up your system design with system modifications or poor maintenance that can create scalding issues then steer clear of combined heating hot water and domestic hot water systems and you will steer clear of potential litigation also.

Cost Impact: The code change proposal will increase the cost of construction
This will cause an increase in equipment costs.

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (Vote:7-6)

Assembly Action: **Disapproved**

P70-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Self (JBEngineer@aol.com)requests Disapprove.

Commenter's Reason: There is a lack of understanding of the operation of these system by the proponent. Thousands of water heaters have been used as the heating source for an air handling unit. The proponent alleges bacteria growth, yet there is no data provided identifying any system with bacteria growth. The proponent also claims energy waste. Again, this shows a lack of understanding as to how these systems work. If a viable system is going to be prohibited by the code, there should be proper technical justification to support such a drastic change, not supposition.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Systems that currently comply with the code are viable and economical. Disapproval of this proposal will allow for these economical heating systems to continue to be installed without an increase or decrease in cost caused by a change in the code requirements.

Public Comment 2:

Proponent: DONALD SURRENA, NATIONAL ASSOCIATION OF HOME BUILDERS, representing National Association of Home Builders (dsurrena@nahb.org)requests Disapprove.

Commenter's Reason: This proposal indicates water in piping will sit stagnant for 6 to 8 months. This is an incorrect statement. The water heating and space heating unit is a dual function appliance. It draws water whenever hot water is used in any of the fixtures in the dwelling. there is no part of the piping system that sits dormant. This proposal will only succeed in increasing the complexity of the heating unit and further increase the cost of construction.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction
Providing a double wall heat exchanger will add to the cost of construction.

Public Comment 3:

Proponent: Assembly Actionrequests Disapprove.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 75.5% (77) to 24.5% (25) by eligible members online during the period of May 9 - May 23, 2018.

P70-18

P79-18 Part I

IPC: 604.3, TABLE 604.3

Proposed Change as Submitted

Proponent: DONALD SURRENA, National Association of Home Builders, representing National Association of Home Builders (dsurrena@nahb.org)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Revise as follows

604.3 Water distribution system design criteria. The water distribution system shall be designed, and ~~pipe sizes shall be selected such that under conditions of~~ sized for peak demand, ~~the capacities at the fixture supply pipe outlets shall be not less than~~ using the values shown in Table 604.3. The minimum flow rate and flow pressure provided to fixtures and appliances not listed in Table 604.3 shall be in accordance with the manufacturer's installation instructions.

TABLE 604.3
FLOW RATES AND PRESSURES FOR DESIGNING WATER DISTRIBUTION ~~SYSTEM DESIGN CRITERIA REQUIRED CAPACITY AT FIXTURE SUPPLY PIPE OUTLETS~~SYSTEMS

FIXTURE SUPPLY OUTLET SERVING	FLOW RATE[a] (gpm)	FLOW PRESSURE (psi)
Bathtub, balanced-pressure, thermostatic or combination balanced-pressure/thermostatic mixing valve	4	20
Bidet, thermostatic mixing valve	2	20
Combination fixture	4	8
Dishwasher, residential	2.75	8
Drinking fountain	0.75	8
Laundry tray	4	8
Lavatory, private	0.8	8
Lavatory, private, mixing valve	0.8	8
Lavatory, public	0.4	8
Shower	2.5	8
Shower, balanced-pressure, thermostatic or combination balanced-pressure/thermostatic mixing valve	2.5[b]	20
Sillcock, hose bibb	5	8
Sink, residential	1.75	8
Sink, service	3	8
Urinal, valve	12	25
Water closet, blow out, flushometer valve	25	45
Water closet, flushometer tank	1.6	20
Water closet, siphonic, flushometer valve	25	35
Water closet, tank, close coupled	3	20
Water closet, tank, one piece	6	20

For SI: 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 3.785 L/m.

a. For additional requirements for flow rates and quantities, see Section 604.4.
b. Where the shower mixing valve manufacturer indicates a lower flow rating for the mixing valve, the lower value shall be applied.

Reason: The section and the table were intended to be used to set design capacities for the domestic water systems,

not for field testing. With the emphasis on low flow fixtures and lower flow rating for mixing valves these numbers are causing confusion and misinterpretation in the field. Looking at the table what would be the health or safety reason for a bathtub to be required to flow at 4 gpm at 20 psi, or a water closet at 6 gpm at 20 psi or even 3 gpm at 20 psi as the table states? Balanced mixing valves are shown as 2.5 gpm at 20 psi or even lower if the manufacturer indicates. How does the inspector regulate the psi from 20 to 8 depending on the fixture being measured? These are all design specifications and not volumes to be measured at the fixture at differing psi.

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

P79-18 Part I

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: There doesn't appear to be a legimate reason for this proposal. The section language already indicates that the table is for design purposes. (Vote:13-1)

Assembly Action: **None**

P79-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: DONALD SURRENA, NATIONAL ASSOCIATION OF HOME BUILDERS, representing National Association of Home Builders (dsurrena@nahb.org)requests As Submitted.

Commenter's Reason: This proposal was approved by the IRC committee 8 in favor and 2 opposed.
This is a clarification of a table and text to indicate the requirements are design criteria and not inspection criteria.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This is a clarification for the use of the values in the table. There is no cost impact for clarifications of the code.

P79-18 Part I

NOTE: P79-18 Part II DID NOT RECEIVE A PUBLIC COMMENT AND IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY

P79-18 Part II

IRC: P2903.1, Table TABLE P2903.1

Proposed Change as Submitted

Proponent: DONALD SURRENA, National Association of Home Builders, representing National Association of Home Builders (dsurrena@nahb.org)

2018 International Residential Code

Revise as follows

P2903.1 Water supply system design criteria. The water service and water distribution systems shall be designed and ~~pipe sizes shall be selected such that under conditions of~~ sized for peak demand, ~~the capacities at the point of outlet discharge shall be not less than~~ using values shown in Table P2903.1.

TABLE P2903.1
~~REQUIRED CAPACITIES AT POINT OF OUTLET DISCHARGE~~FLOW RATE AND PRESSURES FOR DESIGNING PIPING SYSTEMS

FIXTURE SUPPLY OUTLET SERVING	FLOW RATE (gpm)	FLOW PRESSURE (psi)
Bathtub, balanced-pressure, thermostatic or combination balanced-pressure/thermostatic mixing valve	4	20
Bidet, thermostatic mixing valve	2	20
Dishwasher	2.75	8
Laundry tray	4	8
Lavatory	0.8	8
Shower, balanced-pressure, thermostatic or combination balanced-pressure/thermostatic mixing valve	2.5[a]	20
Sillcock, hose bibb	5	8
Sink	1.75	8
Water closet, flushometer tank	1.6	20
Water closet, tank, close coupled	3	20
Water closet, tank, one-piece	6	20

For SI: 1 pound per square inch = 6.895 kPa, 1 gallon per minute = 3.785 L/m.

a. Where the shower mixing valve manufacturer indicates a lower flow rating for the mixing valve, the lower value shall be applied.

Reason: The section and the table were intended to be used to set design capacities for the domestic water systems, not for field testing. With the emphasis on low flow fixtures and lower flow rating for mixing valves these numbers are causing confusion and misinterpretation in the field. Looking at the table what would be the health or safety reason for a bathtub to be required to flow at 4 gpm at 20 psi, or a water closet at 6 gpm at 20 psi or even 3 gpm at 20 psi as the table states? Balanced mixing valves are shown as 2.5 gpm at 20 psi or even lower if the manufacturer indicates. How does the inspector regulate the psi from 20 to 8 depending on the fixture being measured? These are all design specifications and not volumes to be measured at the fixture at differing psi.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is a clarification to existing language and will not impact the cost of construction.

Public Hearing Results

Committee Action: As Submitted

Committee Reason: This is a needed clarification because these pressures and flows cannot be "inspected". This table is only intended to be used for calculation and pipe sizing purposes. (Vote:8-2)

Assembly Action: None

P79-18 Part II

P82-18 Part I

IPC: Table TABLE 604.4

Proposed Change as Submitted

Proponent: Anthony Floyd, City of Scottsdale, representing City of Scottsdale (afloyd@scottsdaleaz.gov)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Revise as follows

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]
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head[a]<u>[c]</u>	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	1.0 gallon per flushing cycle
Water closet	1.6 gallons per flushing cycle

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.
<u>c.</u> <u>Where a shower compartment is served by multiple shower heads, the concurrent discharge of all shower heads controlled by a single valve shall not exceed the maximum flow rate.</u>

Reason: This code change limits the combined shower head flow rate to 2.5 gpm where multiple heads are installed unless the shower is designed to allow only one shower head to operate at a time.
Multiple shower heads were not common when EPAct was enacted 25 years ago to limit the flow rate of shower heads. Since then, shower compartments have trended towards multiple shower heads and body sprays.

This code change ensures that where a shower compartment is served by multiple shower heads, the maximum flow rate is 1) controlled by a single valve for each shower head, 2) designed to allow only one shower head to be in operation at a time or 3) controlled by a single valve for the combined flow rate of multiple heads not exceeding the maximum flow rate.

Shower compartments with multiple showering stations are typically provided with a separate valve for each shower head. Shared shower compartments with separate valve controls are common features and meet the intent of this code change.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There is no cost impact.

P82-18 Part I

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This is a CalGreen requirment that should not be a minimum for everywhere else. (Vote:14-0)

Assembly Action: **None**

P82-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: Anthony Floyd, representing City of Scottsdale (afloyd@scottsdaleaz.gov)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

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]
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head[ac]	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	1.0 gallon per flushing cycle
Water closet	1.6 gallons per flushing cycle

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. Where a shower compartment is served by multiple shower heads, ~~the concurrent discharge of all shower heads controlled by a single~~ each shower control valve shall ~~not exceed the maximum flow rate~~ operate not more than two shower heads or other outlets at any given time.

Commenter's Reason: This modification recognizes shower compartments with multiple shower heads or other shower outlets such as rain heads and body sprays that are not currently addressed in the code. Unlike the CalGreen standard (as referenced by the committee), this modification will allow up to two shower outlets controlled by a single control valve with a higher combined flow rate.
In addition, the shower head flow rate limit remains at 2.5 gpm, not the 2.0 gpm that's in CalGreen. Kohler, Delta, American Standard, Toto and other shower valve product manufacturers have diverter control valves readily available on the market. This modification provides a reasonable limitation on the total volume of water in showers with multiple shower heads and/or other shower outlets that is in line with the Energy Policy Act (1992) for water conservation.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The code change is based on the shower compartment design and number of installed shower heads. It does not require any additional fixtures or valves to be installed.

Public Comment 2:

Proponent: David Collins, representing International Code Council Sustainability, energy and high performance Code Action Committee (sehpcac@iccsafe.org)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

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]
Lavatory, private	2.2 gpm at 60 psi
Lavatory, public (metering)	0.25 gallon per metering cycle
Lavatory, public (other than metering)	0.5 gpm at 60 psi
Shower head[ac]	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Urinal	1.0 gallon per flushing cycle
Water closet	1.6 gallons per flushing cycle

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 <u>or body spray</u> is a shower head .
b. Consumption tolerances shall be determined from referenced standards.
c. Where a shower compartment is served by multiple shower heads, ~~the concurrent discharge of all shower heads controlled by a single~~ <u>each shower control</u> valve shall ~~not exceed the maximum flow rate~~ <u>operate not more than two shower heads</u>.

Commenter's Reason: This modification recognizes shower compartments with multiple shower heads or other shower outlets such as rain heads and body sprays that are not currently addressed in the code. Unlike the CalGreen standard (as referenced by the committee), this modification will allow up to two shower outlets controlled by a single control valve with a higher combined flow rate.
In addition, the shower head flow rate limit remains at 2.5 gpm, not the 2.0 gpm that's in CalGreen. Kohler, Delta, American Standard, Toto and other shower valve product manufacturers have diverter control valves readily available on the market. This modification provides a reasonable limitation on the total volume of water in showers with multiple shower heads and/or other shower outlets that is in line with the Energy Policy Act (1992) for water conservation.

This public comment was submitted by the ICC Sustainability, Energy and High Performance Code Action Committee (SEHPCAC). The SEHPCAC was established by the ICC Board of Directors in July of 2011 to pursue opportunities and to improve and enhance assigned International Codes or portions thereof. Each year the SEHPCAC has historically held 3 open face-to face meetings and numerous Working Group meetings, conference calls and webinars. These meetings, conference calls and webinars are public and are convened to facilitate discussion and debate of proposed changes and public comments to the codes by members of the committee, as well as interested parties.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The code change is based on the shower compartment design and number of installed shower heads. It does not require any additional fixtures or valves to be installed.

P82-18 Part I

P82-18 Part II

IRC: Table TABLE P2903.2

Proposed Change as Submitted

Proponent: Anthony Floyd, City of Scottsdale, representing City of Scottsdale (afloyd@scottsdaleaz.gov)

2018 International Residential Code

Revise as follows

TABLE P2903.2
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGSb

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY
Lavatory faucet	2.2 gpm at 60 psi
Shower head[a] [c]	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Water closet	1.6 gallons per flushing cycle

For SI: 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. A handheld shower spray shall be considered to be a shower head.
b. Consumption tolerances shall be determined from referenced standards.
c. Where a shower compartment is served by multiple shower heads, the concurrent discharge of all shower heads controlled by a single valve shall not exceed the maximum flow rate.

Reason: This code change limits the combined shower head flow rate to 2.5 gpm where multiple heads are installed unless the shower is designed to allow only one shower head to operate at a time.
Multiple shower heads were not common when EPAct was enacted 25 years ago to limit the flow rate of shower heads. As houses and bathrooms have increased in size, many shower compartments have expanded to include multiple shower heads and body sprays.

This code change ensures that where a shower compartment is served by multiple shower heads, the maximum flow rate is 1) controlled by a single valve for each shower head, 2) designed to allow only one shower head to be in operation at a time or 3) controlled by a single valve for the combined flow rate of multiple heads not exceeding the maximum flow rate.

Shower compartments with multiple showering stations are typically provided with a separate valve for each shower head. Shared shower compartments with separate valve controls are common features and meet the intent of this code change.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There is no cost impact.

P82-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This requirement would limit the design possibilities for buildings and shower system manufacturers. (Vote:9-1)

Assembly Action: **None**

P82-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Anthony Floyd, representing City of Scottsdale (afloyd@scottsdaleaz.gov)requests As Modified by This Public Comment.

Modify as follows:

2018 International Residential Code

TABLE P2903.2
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGSb

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY
Lavatory faucet	2.2 gpm at 60 psi
Shower head[ac]	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Water closet	1.6 gallons per flushing cycle

For SI:
1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. A handheld shower spray shall be considered to be a shower head.
b. Consumption tolerances shall be determined from referenced standards.
c. Where a shower compartment is served by multiple shower heads, ~~the concurrent discharge of all shower heads controlled by a single~~ each shower control valve shall ~~not exceed the maximum flow rate~~operate not more than two shower heads or other outlets at any given time.

Commenter's Reason: This modification recognizes shower compartments with multiple shower heads or other shower outlets such as rain heads and body sprays that are not currently addressed in the code. Unlike the CalGreen standard (as referenced by the committee), this modification will allow up to two shower outlets controlled by a single control valve with a higher combined flow rate. This modification will not limit the design possibilities for buildings and shower system manufacturers as stated by the committee.
In addition, the shower head flow rate limit remains at 2.5 gpm, not the 2.0 gpm that's in CalGreen. Kohler, Delta, American Standard, Toto and other shower valve product manufacturers have diverter control valves readily available on the market. This modification provides a reasonable limitation on the total volume of water in showers with multiple shower heads and/or other shower outlets that is in line with the Energy Policy Act (1992) for water conservation.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The code change is based on the shower compartment design and number of installed shower heads. It does not require any additional fixtures or valves to be installed.

Public Comment 2:

Proponent: David Collins, representing International Code Council Sustainability, energy and high performance Code Action Committee (sehpcac@iccsafe.org)requests As Modified by This Public Comment.

Modify as follows:

TABLE P2903.2
MAXIMUM FLOW RATES AND CONSUMPTION FOR PLUMBING FIXTURES AND FIXTURE FITTINGSb

PLUMBING FIXTURE OR FIXTURE FITTING	MAXIMUM FLOW RATE OR QUANTITY
Lavatory faucet	2.2 gpm at 60 psi
Shower head[ac]	2.5 gpm at 80 psi
Sink faucet	2.2 gpm at 60 psi
Water closet	1.6 gallons per flushing cycle

For SI: 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. A handheld shower spray or body spray shall be considered to be a shower head.
b.Consumption tolerances shall be determined from referenced standards.
c.Where a shower compartment is served by multiple shower heads, ~~the concurrent discharge of all shower heads controlled by a single~~ each shower control valve shall ~~not exceed the maximum flow rate~~ operate not more than two shower heads.

Commenter's Reason: This modification recognizes shower compartments with multiple shower heads or other shower outlets such as rain heads and body sprays that are not currently addressed in the code. Unlike the CalGreen standard (as referenced by the committee), this modification will allow up to two shower outlets controlled by a single control valve with a higher combined flow rate. This modification will not limit the design possibilities for buildings and shower system manufacturers as stated by the committee.
In addition, the shower head flow rate limit remains at 2.5 gpm, not the 2.0 gpm that's in CalGreen. Kohler, Delta, American Standard, Toto and other shower valve product manufacturers have diverter control valves readily available on the market. This modification provides a reasonable limitation on the total volume of water in showers with multiple shower heads and/or other shower outlets that is in line with the Energy Policy Act (1992) for water conservation.

This public comment was submitted by the ICC Sustainability, Energy and High Performance Code Action Committee (SEHPCAC). The SEHPCAC was established by the ICC Board of Directors in July of 2011 to pursue opportunities and to improve and enhance assigned International Codes or portions thereof. Each year the SEHPCAC has historically held 3 open face-to face meetings and numerous Working Group meetings, conference calls and webinars. These meetings, conference calls and webinars are public and are convened to facilitate discussion and debate of proposed changes and public comments to the codes by members of the committee, as well as interested parties.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The code change is based on the shower compartment design and number of installed shower heads. It does not require any additional fixtures or valves to be installed.

P82-18 Part II

P91-18

IPC: 606.1

Proposed Change as Submitted

Proponent: Guy McMann, representing Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2018 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, 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: It is a needless inconvenience to have to shut down an entire building when tenants need to work on their own water piping or in the case of emergencies. For the minimal cost of a valve, it makes sense to isolate tenant spaces just as what is done for gas piping. Opening the system causes air in pipes in other units that they might not be aware of and possibly causing a water hammer situation that can have a negative effect on the piping.

Cost Impact: The code change proposal will increase the cost of construction
The increase will be the cost of the valve and the labor to install it.

P91-18

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: The Committee agreed with the published reason statement. (Vote:10-4)

Assembly Action: **None**

P91-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, representing Self (jbengineer@aol.com)requests As Modified by This Public Comment.

Modify as follows:

2018 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, 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 except where each fixture is equipped with individual stops.
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: For high rise plumbing systems, piping design goes from horizontal to vertical. (This actually occurs for building 4 stories and taller.) In vertical piping arrangements, multiple risers can serve a single tenant space. There is not a single pipe that serves all of the fixtures in that tenant space. This change would, in effect, prohibit a common piping design which is highly efficient and economical. Each fixture has a shut off valve in this piping arrangement. Hence, the except adds a requirement for individual stops.
The code already requires a shut off valve at the top of each downfeed or the bottom of each riser. This will provide the control for shutting off the water in a high rise building.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction This change will allow vertical piping arrangements to be installed in tall buildings. This is a less expensive means of installing the water piping. If the modification is not accepted, vertical piping installation would not be permitted.

Public Comment 2:

Proponent: Jeffrey Hugo, representing National Fire Sprinkler Association (hugo@nfsa.org)requests As Modified by This Public Comment.

Modify as follows:

2018 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, where a common domestic 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: While the IPC is strictly for plumbing systems there could be an interpretation to valve automatic sprinkler systems for individual units. An application of the IPC with the current wording could apply to every unit on every floor and goes far beyond the installation standards (NFPA 13 and NFPA 13R). Including the word domestic clarifies the valve is only for the plumbing system.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction This clarification would eliminate excessive valves, electric supervision and maintenance costs for individual valves of automatic sprinkler systems in each unit.

P91-18

P94-18

IPC: 607.1

Proposed Change as Submitted

Proponent: Duane Jonlin, representing City of Seattle (duane.jonlin@seattle.gov)

2018 International Plumbing Code

Revise as follows

607.1 Where required. In residential *occupancies*, *hot water* shall be supplied to plumbing fixtures and equipment utilized for bathing, washing, culinary purposes, cleansing, laundry or building maintenance. In nonresidential *occupancies*, *hot water* shall be supplied for culinary purposes, cleansing, laundry or building maintenance purposes. In nonresidential *occupancies*, *hot water* or *tempered water* shall be supplied for bathing and washing purposes.

> **Exception:** Where the water serving public lavatories that are not served by separate hot and cold water pipes is not heated, or is heated with a water heating system that is not capable of heating the water to a temperature above 80° F, this section shall not apply.

Reason: Use of 120-degree water for handwashing *increases* the risk of disease transmission, as well as wasting energy and increasing the cost and complexity of construction. Room temperature water provides equal handwashing hygiene, while not supporting the growth of legionella. This proposal makes hot water *optional* for lavatories, and provides significant cost savings: the hot water piping, circulation pumps, pipe insulation, tempering valves, mixing valves and numerous other components would become unnecessary, and little if any water heating would be required. Operational savings and risk reduction persist for the life of the building, with dramatically decreased energy, maintenance, and equipment replacement costs, and no growth of legionella.
Owners can still provide hot water for handwashing, but this proposal allows those concerned with cost, safety and disease control to opt out if they so choose.

Bibliography: Show Me the Science - How to Wash Your Hands, Centers for Disease Control and Prevention (2017), page 1, www.cdc.gov/handwashing/show-me-the-science-handwashing.html
The environmental cost of misinformation: why the recommendation to use elevated temperatures for handwashing is problematic, International Journal of Consumer Studies, Carrico, Amanda R., et al. (2013) page 2.

Cool Water as Effective as Hot for Removing Germs During Handwashing, Infection Control Today (2017) page 1

Water temperature as a factor in handwashing efficacy, Food Service Technology, Michaels, B, et al, (2002) pages 139-149

Cost Impact: The code change proposal will decrease the cost of construction
This proposal makes hot water for lavatories *optional*.

For those who choose to provide hot water for lavatories, there is no cost change.

For those who choose *not* to provide hot water for lavatories, there are significant cost savings in materials, labor and space usage, due to the elimination of an entire system serving those lavatories. In addition, operational savings for energy, maintenance and equipment replacement are dramatically reduced and in some cases eliminated for the building's water heating and distribution system.

P94-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The Committee is not against the concept however, the language in the exception is not clear and could conflict with Section 419.5. (Vote:14-0)

Assembly Action: **As Submitted**

P94-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Duane Jonlin, representing City of Seattle (duane.jonlin@seattle.gov); Jenifer Gilliland, representing City of Seattle, Washington requests As Modified by This Public Comment.

Replace as follows:

2018 International Plumbing Code

419.5 Tempered water for public hand-washing facilities. *Tempered water* shall be delivered from lavatories and group wash fixtures located in public toilet facilities provided for customers, patrons and visitors. *Tempered water* shall be delivered through an *approved* water-temperature limiting device that conforms to ASSE 1070/ASME A112.1070/CSA B125.70 or CSA B125.3.

> **Exception:** Where the water serving public lavatories that are not served by separate hot and cold water pipes is not heated, or is heated with a water heating system that is not capable of heating the water to a temperature above 80 degrees F, this section shall not apply to those public lavatories.

607.1 Where required. In residential *occupancies*, *hot water* shall be supplied to plumbing fixtures and equipment utilized for bathing, washing, culinary purposes, cleansing, laundry or building maintenance. In nonresidential *occupancies*, *hot water* shall be supplied for culinary purposes, cleansing, laundry or building maintenance purposes. In nonresidential *occupancies*, *hot water* or *tempered water* shall be supplied for bathing and washing purposes.

> **Exception:** Where the water serving public lavatories that are not served by separate hot and code water pipes is not heated, or is heated with a water heating system that is not capable of heating the water to a temperature above 80 degrees F, this section shall not apply to those public lavatories.

Commenter's Reason: The goal of the proposed code change is to make hot water, as defined by the International Plumbing Code, *optional* for public lavatories. Adoption of P94 will result in several benefits for the building owner as well as the public including reductions in construction cost, disease transmission risk, and energy consumption.
In its review of the proposal, the Plumbing Code Committee stated that it was "not against the concept. However, the language in the exception is not clear and could conflict with Section 419.5." To address this concern, the wording of the changes to IPC 714.2 exception in the original proposal also being added to Section IPC 419.5. This should eliminate concerns about the alignment of these sections.

Bibliography: Please see sources in original proposal.

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction
The cost reductions will include reductions in the size of water heating and pumping equipment, length and diameter of hot water piping, pipe insulation, and mixing valves. In addition, there will be reductions in space requirements, both in equipment rooms and in wall/ceiling cavities.

P94-18

P96-18

IPC: 607.1.1, 607.1.2, Chapter15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation (JBEngineer@aol.com)

2018 International Plumbing Code

Revise as follows

607.1.1 Temperature limiting means. A thermostat control for a water heater shall ~~not~~ only serve as the temperature limiting means for the purposes of complying with the requirements of this code for maximum allowable *hot* or *tempered water* delivery temperature at fixtures where the water heater complies with ASSE 1082, ASSE 1084, or ASSE 1085.

607.1.2 Tempered water temperature control. Tempered water shall be ~~supplied through a water temperature~~ controlled by one the following:

1. A limiting device ~~that conforms~~ conforming to ASSE 1070/ASME A112.1070/CSA B125.70 ~~and shall limit the *tempered water* to not greater than~~ set to a maximum of 110ºF (43ºC).

2. A thermostatic mixing valve conforming to ASSE 1017.
3. A water heater conforming to ASSE 1082.
4. A water heater conforming to ASSE 1084.

This provision shall not supersede the requirement for protective shower valves in accordance with Section 412.3.

Add new standard(s) follows

ASSE

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

1085-2018:

Performance Requirements for Water Heaters for Emergency Equipment

1084-2018:

Performance Requirements for Water Heaters used as Temperature Limiting Devices

1082-2018:

Performance Requirements for Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

Reason: The restriction on the use of the water heater thermostat for regulating water temperature is based on standard water heaters. There are three new water heater standards that regulate the outlet temperature of the water heater. Hence, it is appropriate to use reference these standards as the only water heaters in which the water heater thermostat can be used to regulate the upper temperature limit.
Tempered water is a comfort requirement, as well as, a scald prevention requirement. However, comfort overrides the safety requirement since tempered water is limited to a maximum temperature of 110° F. Scalding temperatures are in excess of this temperature. Other viable means of controlling tempered water to 110° F or less are available in addition to a limiting device that complies with ASSE 1070/ASME A112.1070/CSA B125.70. The most common means of controlling tempered water is with a thermostatic mixing valve that complies with ASSE 1017.

A thermostatic mixing valve is an effective method of regulating the maximum temperature. The temperature is maintained within a few degrees depending on the flow rate. Scalding temperatures are in excess of this temperature. Other viable means of maintaining the water temperature to a maximum of 110° F are water heater meeting one of the three new water heater standards.

The three new standard for water heaters are ASSE 1082, ASSE 1084, and ASSE 1085. These water heaters are equivalent to ASSE 1017, ASSE 1070, and ASSE 1071 respectively. As such, they have the capability of providing an equivalent level of performance as the corresponding mixing valve. While a water heater complying with ASSE 1071 is designed to supply tepid water for emergency fixtures, the tepid temperature range can also meet the tempered temperature range. Hence, an ASSE 1085 water heater is also a viable option.

Cost Impact: The code change proposal will decrease the cost of construction
The options may lower the cost of installation.

Analysis: A review of the standards proposed for inclusion in the code, ASSE 1085-2018, ASSE 1084-2018 and ASSE1082-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P96-18

Public Hearing Results

Committee Action: **As Modified**

Committee Modification: 607.1.1 Temperature limiting means. A thermostat control for a water heater shall only serve as the temperature limiting means for the purposes of complying with the requirements of this code for maximum allowable hot or tempered water delivery temperature at fixtures where the water heater complies with ASSE 1082~~, ASSE 1084,~~ or ASSE 1085.

Committee Reason: For the Modification: The ASSE 1084 standard is not yet completed.
For the Proposal: The Committee agreed with the published reason statement. (Vote:10-4)

Assembly Action: **Disapproved**

P96-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Conrad Jahrling, representing ASSE International (conrad.jahrling@asse-plumbing.org)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

607.1.1 Temperature limiting means. A thermostat control for a water heater shall only serve as the temperature limiting means for the purposes of complying with the requirements of this code for maximum allowable *hot* or *tempered water* delivery temperature at fixtures where the water heater complies with ASSE 1082~~,or ASSE 1085~~.

607.1.2 Tempered water temperature control. Tempered water shall be controlled by one the following:

1. A limiting device conforming to ASSE 1070/ASME A112.1070/CSA B125.70 set to a maximum of 110 F (43 C).
~~2. A thermostatic mixing valve conforming to ASSE 1017.~~
~~3. A water heater conforming to ASSE 1082.~~
~~4.~~2. A water heater conforming to ASSE 1084.

This provision shall not supersede the requirement for protective shower valves in accordance with Section 412.3.

Commenter's Reason: *With regard to 607.1.1*
Only devices that conform to ASSE 1082 are appropriate for this application for water distribution. Water heaters conforming to ASSE 1084 only supply tempered water to point-of-use devices and fittings, similar to water temperature limiting devices conforming to ASSE 1070 / ASME A112.1070 / CSA B125.70. Water heaters conforming to ASSE 1085 only supply emergency fixtures that conform to ISEA Z358.1.

With regard to 607.1.2

Devices that conform to either ASSE 1017 or ASSE 1082 are not for controlling water temperature by the end user, which is the scope of this section. It is only appropriate to use a device that conforms to ASSE 1084 or ASSE 1070 / ASME A112.1070 / CSA B125.70.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
These are alternative devices being proposed to the currently required methods in the code. Alternatives in the code do not cause a cost impact.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018, ASSE 1084-2018 and ASSE 1085-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

Public Comment 2:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Bradley Corporation

(JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: At the time of the hearing, ASSE 1084 was not completed. The standard is now available.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The proposal will accept the original code change. The cost impact is the same as state in the original change.

Staff Analysis: In accordance with Section 3.6.3.1 of ICC Council Policy 28, the new referenced standards ASSE 1082-2018, ASSE 1084-2018 and ASSE 1085-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.

Public Comment 3:

Proponent: Assembly Actionrequests Disapprove.

Commenter's Reason: This code change proposal is on the agenda for individual consideration because the proposal received a successful assembly action. The assembly action for Disapprove was successful by a vote of 58.3% (60) to 41.7% (43) by eligible members online during the period of May 9 - May 23, 2018.

Public Comment 4:

Proponent: CP28 Administration.

Commenter's Reason: The administration of ICC Council Policy 28 (CP28) is not taking a position on this code change. This public comment is being submitted to bring a procedural requirement to the attention of the ICC voting membership. In accordance with Section 3.6.3.1.1 of ICC Council Policy 28 (partially reproduced below), the new referenced standards ASSE 1082-2018, ASSE 1084-2018 and ASSE 1085-2018 must be completed and readily available prior to the Public Comment Hearing in order for this public comment to be considered.
(CP28) 3.6.3.1.1 Proposed New Standards. In order for a new standard to be considered for reference by the Code, such standard shall be submitted in at least a consensus draft form in accordance with Section 3.4. If the proposed new standard is not submitted in at least consensus draft form, the code change proposal shall be considered incomplete and shall not be processed. The code change proposal shall be considered at the Committee Action Hearing by the applicable code development committee responsible for the corresponding proposed changes to the code text. If the committee action at the Committee Action Hearing is either As Submitted or As Modified and the standard is not completed, the code change proposal shall automatically be placed on the Public Comment Agenda with the recommendation stating that in order for the public comment to be considered, the new standard shall be completed and readily available prior to the Public Comment Hearing

Bibliography: Lorem ipsum dolor amit.

P96-18

P99-18

IPC: 609.2

Proposed Change as Submitted

Proponent: Guy McMann, representing Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)

2018 International Plumbing Code

Revise as follows

609.2 Water service. Hospitals shall have two water service pipes installed in such a manner so as to minimize the potential for an interruption of the supply of water in the event of a water main or water service pipe failure. Each water service pipe shall enter the building independently and shall be sized in accordance with Section 603.1.

Reason: This Section lacks some specificity and doesn't provide much guidance. The intent is to eliminate the possibility of water service interruption. There needs to be a separation distance for the two water lines that designers can employ based the the situation. No specific number has been submitted as each situation will require analysis by the designers

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This is editorial in nature and isnt requiring anything in addition to whats already required.

P99-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This is already taken care of by the definition of water service pipe. (Vote:13-0)

Assembly Action: **None**

P99-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Guy McMann, Jefferson County Colorado, representing Colorado Association of Plumbing and Mechanical Officials (CAPMO) (gmcmann@jeffco.us)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

609.2 Water service. Hospitals shall have two water service pipes installed in such a manner so as to minimize the potential for an interruption of the supply of water in the event of a water main or water service pipe failure. Each water service pipe shall enter the building ~~independently and~~ seperately and shall be sized in accordance with Section 603.1.

Commenter's Reason: The committee didn't care for the word "independently" and preferred the word "separately" instead.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This is editorial and will not increase cost.

P99-18

P104-18

IPC: 702.6, TABLE 702.6 (New), 901.3, 902.1.1 (New), Chapter 15

Proposed Change as Submitted

Proponent: Brian Helms, Charlotte Pipe and Foundry, Plastics Division, representing Charlotte Pipe and Foundry (brian.helms@charlottepipe.com)

2018 International Plumbing Code

Revise as follows

702.6 Chemical waste drainage system. A chemical waste drainage system, including its vent system, shall be completely ~~separated~~ independent from ~~the~~ any sanitary drainage system. The pipes and fittings of a chemical waste drainage system shall conform to any of the applicable standards indicated in Table 702.6. The pipe and fitting material shall be recommended by the manufacturers of the pipe and fittings for the temperatures, types and concentrations of chemicals that the system is designed for. The drainage in a chemical waste drainage system shall be treated in accordance with Section 803.2 before discharging to ~~the~~ a sanitary drainage system. ~~Separate drainage systems for chemical wastes and vent pipes shall be of an *approved* material that is resistant to corrosion and degradation for the concentrations of chemicals involved.~~

Add new text as follows

TABLE 702.6
CHEMICAL DRAINAGE SYSTEM PIPE AND FITTINGS

MATERIAL	STANDARD
Chlorinated polyvinyl chloride (CPVC)	ASTM F2618
High silicon iron	ASTM A518/A518M
Polypropylene (PP)	ASTM F1412
Polyvinylidene flouride (PVDF)	ASTM F1673
Chemical-resistance glass	ASTM C1053
Stainless steel drainage systems	ASME A112.3.1

Revise as follows

901.3 Chemical waste ~~vent systems.~~drainage system venting.. The vent system for a chemical waste drainage system shall be independent of ~~the sanitary vent system and shall terminate separately~~ any vent system for a sanitary drainage system. The termination of a vent system for a chemical waste drainage 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 materials ~~*approved*~~ in accordance with Section 702.6 and shall be tested for chemical resistance in accordance with ASTM F1412.

Add new text as follows

902.1.1 Chemical waste drainage system vents. The pipe and fitting materials for the vent system of a chemical waste drainage 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) follows

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken PA 19428-2959

F2618-15:

Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Fittings for Chemical Waste Drainage Systems

C1053-00 (2015):

Standard Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications
A518/A518M -99 (2012):

Standard Specification for Corrosion-Resistant High-Silicon Iron Castings

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Reason: Corrosive and laboratory waste drainage is very different from other applications such as food handling and sterilization included in this chapter. Since the code provides direction on system design in section 803.2, it should also provide direction on allowable materials for these applications. This code change proposal includes all materials either currently manufactured or available in the market that are manufactured to standards specifically for corrosive or laboratory waste drainage applications.

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 corrosive or laboratory waste applications.

Analysis: A review of the standard proposed for inclusion in the code, ASTM F2618-15, ASTM C1053-00 (2015), and ASTM A518/A518M -99 (2012) with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P104-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This is too broad of approach. It is not enforceable. (Vote:12-1)

Assembly Action: **None**

P104-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Brian Helms, representing Charlotte Pipe and Foundry (brian.helms@charlottepipe.com)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

TABLE 702.6
CHEMICAL DRAINAGE SYSTEM PIPE AND FITTINGS

Portions of table not shown remain unchanged.

MATERIAL	STANDARD
~~Stainless steel drainage systems~~	~~ASME A112.3.1~~

702.6 Chemical waste drainage system. A chemical waste drainage system, including its vent system, shall be completely independent from any sanitary drainage system. The pipes and fittings of a chemical waste drainage system shall conform ~~to any of the~~ to the applicable standards indicated in Table 702.6. ~~The pipe and fitting material shall be recommended by the manufacturers of the pipe and fittings for the temperatures, types and concentrations of chemicals that the system is designed for.~~ The drainage in a chemical waste drainage system shall be treated in accordance with Section 803.2 before discharging to a sanitary drainage system.

902.1.1 Chemical waste drainage system vents. The pipe and fitting materials for the vent system of a chemical waste drainage 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.~~702.6.

Commenter's Reason: This comment clarifies the language from the original proposal and removes Stainless Steel from the proposed table.
Chemical waste drainage is very different from sanitary drainage applications included in Chapter 7. Chemical waste applications require pipe and fitting systems that are specifically designed to convey waste that may be harmful to other piping materials as well as the health and safety of the public. The code currently provides direction on allowable materials for sanitary drainage systems in tables 702.1, 702.2, 702.3 and 702.4 but is not as specific regarding chemical waste in 702.6.

Since the code requires chemical waste systems to be completely separated from the sanitary system in section 702.6 and provides direction on system design in section 803.2, it should also include a table to provide direction on allowable materials for these applications. Currently, section 702.6 requires an “approved” material, which by definition in Chapter 2, means that the material should be “acceptable to the code official.” The removal of this statement and the addition of the proposed table will eliminate any confusion regarding appropriate materials for chemical waste drainage applications.

Materials used for vents in these systems should exhibit the same physical characteristics regarding temperature and chemical resistance and therefore should be held to the same requirements.

This code change proposal includes all materials either currently manufactured or available in the market that are manufactured to standards specifically for corrosive or laboratory waste drainage applications.

Cost Impact: The net effect of the public comment and 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.

P104-18

P108-18

IPC: Table 702.4, 705.10.4 (New), Chapter 15

Proposed Change as Submitted

Proponent: Brian Conner, representing Charlotte Pipe and Foundry (bconner@charlottepipe.com)

2018 International Plumbing Code

Add new text as follows

705.10.4 Push-fit joints. Push-fit joints shall conform to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

Revise as follows

TABLE 702.4
PIPE FITTINGS

MATERIAL	STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters	ASTM D2661; ASTM F628; CSA B181.1
Acrylonotrile 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; CSA B181.3
Polyvinyl chloride (PVC) plastic in IPS diameters	ASTM D2665; ASTM F1866; ASME A112.4.4
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
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.

Add new standard(s) follows

ASME

American Society of Mechanical Engineers
Two Park Avenue
New York NY 10016-5990

A112.4.4-2017:

Plastic Push Fit Drain, Waste, and Vent (DWV) Fittings

Reason: Adding this section along with the consensus standard for Push-fit DWV fittings will give code officials direction on inspecting push-fit fitting installations and installers direction on installing push-fit fittings.
Adding this section is consistent with 'push-fit joints" sections in chapter 6.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
Adding this section to the code will not increase or decrease the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.4.4-2017, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P108-18

Public Hearing Results

Committee Action: **As Modified**

Committee Modification: 705.10.4 Push-fit joints. Push-fit ~~joints~~ DWV fittings shall be listed and labeled ~~shall conform~~ to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

Committee Reason: For the Modification: Clarifies that the standard is for the fittings and not the joint.
For the Proposal: Consistency with action on P105-18. (Vote:14-0)

Assembly Action: **None**

P108-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Self (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: Listing and labeling is already required by Section 303.4. There is no need to duplicate the requirement for listing and labeling. The proper reference to the standard is in the original code change.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change is editorial in nature. As such, there is no impact to the cost of construction.

P108-18

P109-18 Part II

IRC: P3003.9.4 (New), TABLE P3002.3, Chapter 44

Proposed Change as Submitted

Proponent: Angel Guzman Rodriguez, ASME, representing The American Society of Mechanical Engineers (ASME)

2018 International Residential Code

Add new text as follows

P3003.9.4 Push-fit joints. Push-fit joints shall conform to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

Revise as follows

TABLE P3002.3
PIPE FITTINGS

PIPE MATERIAL	FITTING STANDARD
Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters	ASTM D2661; ASTM D3311; ASTM F628; CSA B181.1
Acrylonotrile 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
Gray iron and ductile iron	AWWA C110/A21.10
Polyethylene	ASTM D2683
Polyolefin	ASTM F1412; CSA B181.3
Polyvinyl chloride (PVC) plastic in IPS diameters	ASTM D2665; ASTM D3311; ASTM F1866; ASME A112.4.4
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
PVC fabricated fittings	ASTM F1866
Stainless steel drainage systems, Types 304 and 316L	ASME A112.3.1
Vitrified clay	ASTM C700

For SI: 1 inch = 25.4 mm.

Add new standard(s) follows

ASME

American Society of Mechanical Engineers
Two Park Avenue
New York NY 10016-5990

A112.4.4-2017:

Plastic Push Fit Drain, Waste, and Vent (DWV) Fittings

Reason: A new standard has been published for push fit fittings to be used in DWV applications. Fittings are to be used with ABS or PVC pipe only in non-pressure applications.

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

A review of the standard proposed for inclusion in the code, ASME A112.4.4-2017, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P109-18 Part II

Public Hearing Results

Committee Action: **As Modified**

Committee Modification: P3003.9.4 Push-fit joints. Push-fit DWV fittings ~~joints~~ shall ~~conform~~ be listed and labeled to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

Committee Reason: For the Modification: Consistency with modifications made on P106-18 Part II.
For the Proposal: Consistency with action on P106-18 Part II. (Vote:10-0)

Assembly Action: **None**

P109-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Self (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: Listing and labeling is already required by Section 2609.4. There is no need to duplicate the requirement for listing and labeling. The proper reference to the standard is in the original code change.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The change is editorial. As such, there is no impact to the cost of construction.

P109-18 Part II

NOTE: P109-18 Part I DID NOT RECEIVE A PUBLIC COMMENT AND IS REPRODUCED FOR INFORMATIONAL PURPOSES ONLY

P109-18 Part I

IPC: TABLE 702.4, 705.10.4 (New), Chapter 15

Proposed Change as Submitted

Proponent: Angel Guzman Rodriguez, ASME, representing The American Society of Mechanical Engineers (ASME)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Add new text as follows

705.10.4 Push-fit joints. Push-fit joints shall conform to ASME A112.4.4 and shall be installed in accordance with the manufacturer's instructions.

Revise as follows

TABLE 702.4
PIPE FITTINGS

	MATERIAL	STANDARD
	Acrylonitrile butadiene styrene (ABS) plastic pipe in IPS diameters	ASTM D2661; ASTM F628; CSA B181.1
	Acrylonotrile 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; CSA B181.3
	Polyvinyl chloride (PVC) plastic in IPS diameters	ASTM D2665; ASTM F1866; ASME A112.4.4
	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
	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.

Add new standard(s) follows

ASME

American Society of Mechanical Engineers
Two Park Avenue
New York NY 10016-5990

A112.4.4-2017:

Plastic Push Fit Drain, Waste, and Vent (DWV) Fittings

Reason: A new standard has been published for push fit fittings to be used in DWV applications. Fittings are to be used with ABS or PVC pipe only in non-pressure applications.

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

Analysis: A review of the standard proposed for inclusion in the code, ASME A112.4.4-2017, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P109-18 Part I

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: The Committee already addressed this topic in P108-18. (Vote:14-0)

Assembly Action: **None**

P109-18 Part I

P116-18

IPC: 717 (New), 717.1 (New), Chapter 15

Proposed Change as Submitted

Proponent: Sidney Cavanaugh, representing LMK Technologies (sidneycavanaugh@yahoo.com)

2018 International Plumbing Code

Add new text as follows

717 BUILDING SEWER AND SEWER SERVICE LATERAL REHABILITATION

717.1 Building sewer and sewer service lateral rehabilitation. Any rehabilitation of building sewer piping and sewer service lateral piping shall be in accordance with ASTM F2599. Any rehabilitation of building sewer and sewer service lateral pipe and its connection to the main sewer pipe shall be in accordance with F2561. All rehabilitation of building sewer piping and sewer service laterals shall include the use of hydrophilic rings or gaskets meeting ASTM F3240 to assure water tightness and elimination of ground water penetration.

Add new standard(s) follows

ASTM

ASTM International
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken PA 19428-2959

F2599-16:

Standard Practice for The Sectional Repair of Damaged Pipe By Means of An Inverted Cured-In-Place Liner

F2561-17:

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

F3240-17:

Standard Practice for Installation of Seamless Molded Hydrophilic Gaskets (SMHG) for Long-Term Watertightness of Cured-in-Place Rehabilitation of Main and Lateral Pipelines

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Reason: To add necessary requirements for rehabilitation of building sewers and sewer service laterals that are currently missing from IPC.

Cost Impact: The code change proposal will not increase or decrease the cost of construction but in most cases it would decrease cost since there is no need of digging up and replacing existing piping

Analysis: A review of the standard proposed for inclusion in the code, ASTM F2599-16, ASTM F2561-17,ASTM F3240- 17, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P116-18

Public Hearing Results

Committee Action: As Modified

Committee Modification: 717.1 Building sewer and sewer service lateral rehabilitation. ~~Any~~ Cured-in-place rehabilitation of building sewer piping and sewer service lateral piping shall be in accordance with ASTM F2599. ~~Any~~ Cured-in-place rehabilitation of building sewer and sewer service lateral pipe and its connection to the main sewer pipe shall be in accordance with F2561. All cured-in-place rehabilitation of building sewer piping and sewer service laterals shall include the use of hydrophilic rings or gaskets meeting ASTM F3240 to assure water tightness and elimination of ground water penetration.

Committee Reason: For the Modification: Clarification is necessary to to indicate that the process is only for cured-in-place rehabilation.
For the Proposal: The Committee agreed with the published reason statement. (Vote:14-0)

Assembly Action: None

P116-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Joanne Carroll, Subtegic Group Inc., representing National Association of Sewer Service Companies (jcarroll@subtegic.com)requests Disapprove.

Commenter's Reason: Disapprove the code change. The proposed text is written to exclude valid materials and processes in place of proprietary materials and processes. Also, the proposed addition of ASTM standards require these proprietary materials and processes.
The proposed code change requires the use of hydrophilic seals or gaskets to provide a watertight seal. However, most cured-in-place-pipe technologies do not use hydrophilic seals or gaskets but rather use epoxy and other methods to make a watertight seal. Mandating the use of gaskets eliminates most of the current technology that has been used for decades. There was no technical justification provided to eliminate the use of current methods in favor of this technology.

The proposal P116-18 includes patented or otherwise exclusive supplier, material and practices including proposed reference ASTM Standards F2599, F2561 and F3240. In accordance with ASTM Regulations, *when an approved standard requires the use of a patented material, product, or apparatus, the standard shall include a footnote requesting interested parties to submit information regarding the identification of alternatives to the patented items*. Patent reference is shown on the first page of each of the proposed reference ASTM Standards further supporting this Public Comment to Disapprove the addition of ASTM Standards F2599, F2561 and F3240, and the proposal which required these Standards. In addition, CP#28-05 Code Development, Section 3.6.2.5, states that "The standard shall not have the effect of requiring proprietary materials."

Bibliography: ASTM (2017), "Regulations Governing ASTM Technical Committees, Section 15 Patents in Standards", ASTM International, 2017
ICC (2017), “CP#28-05 Code Development”, International Code Council, 2017

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction
The net effect of the public comment and disapproval of the code change proposal will decrease the cost of construction by providing more options for products which meet the Code; and, by not limiting these products only to patented materials and practices.

Public Comment 2:

Proponent: Carl Marc-Aurele, representing Formadrain Inc. (carl@formadrain.com)requests Disapprove.

Commenter's Reason: This proposal restricts technologies that could be used to successfully achieve building sewer rehabilitation to the submitter's own products.
ASTM F2599 describes a methodology that inverts a liner inside a pipe. Even after modification, the wording "Cured-in-place rehabilitation [...] shall be in accordance with ASTM F2599" prevents the use of pulled-in-place technologies and future invention as well. The inclusion of ASTM F2599 without the inclusion of ASTM F1216, F1743 and many other rehabilitation related standards is misleading and uninclusive.

ASTM F2561, ASTM F2599 and ASTM F3240 all include the use of "hydrophilic rings" as the sole acceptable sealing method for liners. The hydrophilic seals are proprietary patented technology from the submitter and they are not the only way of achieving proper sealing at the ends of liners, as other technologies and resins (such as epoxy versus polyester) are successfully certified NSF14 and pass the leakage test on a quarterly basis and achieve the necessary water tightness without the use of these proprietary seals.

I am pro-rehabilitation of building sewers, but this proposal is product driven and not results driven. I therefore disapprove of the code change proposal and strongly recommend the committee revises its position accordingly.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
It depends on the point of view:

Comparing CIPP with conventional dig-and-replace, using CIPP in building sewers will most of the time decrease the cost of construction.

Comparing LMK's own CIPP with other CIPP technologies, the hydrophillic seals being a patented and proprietary technology, the restriction to use them in every situation (even when not necessary with the CIPP system used) will have other CIPP manufacturers forced to add an unnecessary proprietary part to their already working systems to comply with the IPC and therefore increase the cost of construction.

Public Comment 3:

Proponent: Abraham I. Murra, Self, representing Trelleborg Pipe Seals Lelystad B.V.requests Disapprove.

Commenter's Reason: ASTM F2561, ASTM F2599, and ASTM F3240 are proprietary standards that cover products protected by patents, as stated in the first pages of each of the standards (see note below). Referencing those standards in the code would exclude alternative technologies and violate the ANSI patent policy. It is not possible to comply with any one of the standards referenced without infringing patent rights; therefore, it would become necessary to pay royalties and request licenses from the owner of the patents, effectively granting the patent holder control of the marketplace and restricting it. There are no technical reasons justifying the restrictions in the proposal, as there are several other technologies that can and have been successfully used in the rehabilitation of pipes.
Therefore, I request that the proposal be disapproved.

Note: F2561-16, 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 states: "*The rehabilitation of a sewer service lateral and its connection to the main using a one-piece main and lateral cured-in-place liner is covered by patents (LMK Enterprises, Inc. 1779 Chessie Lane, Ottawa, IL 61350). Interested parties are invited to submit information regarding the identification of acceptable alternativesto this patented item to the Committee on Standards, ASTM Headquarters...*"

Cost Impact: The net effect of the public comment and code change proposal will decrease the cost of construction
This public comment will **prevent** the cost of construction from increasing.

The contrary, that is, accepting code change proposal # P116-18 will **increase** the cost of construction, because it would become necessary to pay royalties and request licenses from the owner of the patents, effectively granting the patent holder control of the marketplace and restricting it.

P116-18

P120-18

IPC: 1002.1

Proposed Change as Submitted

Proponent: James Richardson Jr, representing City of Columbus Ohio (jarichardson@columbus.gov); Robert Schutz, representing City of Columbus, OH (RJSchutz@columbus.gov)

2018 International Plumbing Code

Revise as follows

1002.1 Fixture traps. Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.3.3. A fixture shall not be double trapped.

Exceptions:

1. This section shall not apply to fixtures with integral traps.
2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.

~~3. A grease interceptor intended to serve as a fixture trap in accordance with the manufacturer's installation instructions shall be permitted to serve as the trap for a single fixture or a combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the *developed length* of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm).~~

~~4.~~3. Floor drains in multilevel parking structures that discharge to a building storm *sewer* shall not be required to be individually trapped. Where floor drains in multilevel parking structures are required to discharge to a combined *building sewer* system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.

Reason: This is an error in the code that has been present since the change was made to section 802.1.7 requiring that utensil/pot/pan sinks to be indirectly connected. Previously a direct connection was also permissible, which promulgated exception # 3. Since a direct connection is no longer permissible for these type of sinks, exception # 3 would be in direct violation of 802.1.7

Bibliography: 2018 International Plumbing Code
PUB. - 08/31/2017

802.1.7 Food utensils, dishes, pots and pans sinks.

Sinks, in other than dwelling units, used for the washing, rinsing or sanitizing of utensils, dishes, pots, pans or service ware used in the preparation, serving or eating of food **shall discharge indirectly through an air gap or an air break to the drainage system.**

1002.1 Fixture traps.

Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.3.3. A fixture shall not be double trapped.

Exceptions:

1. 1. This section shall not apply to fixtures with integral traps.
2. 2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.
3. **3. A grease interceptor intended to serve as a fixture trap in accordance with the manufacturer's installation instructions shall be permitted to serve as the trap for a single fixture or a combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the developed length of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm).**
4. 4. Floor drains in multilevel parking structures that discharge to a building storm sewer shall not be required to be individually trapped. Where floor drains in multilevel parking structures are required to discharge to a combined building sewer system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
There will be no cost impact due to the fact that the requirement is already in chapter 8 for an indirect connection.

P120-18

Public Hearing Results

Committee Action: As Modified

Committee Modification: 1002.1 Fixture traps. Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.3.3. A fixture shall not be double trapped.

Exceptions:

1. This section shall not apply to fixtures with integral traps.

2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.

3. Floor drains in multilevel parking structures that discharge to a building storm sewershall not be required to be individually trapped. Where floor drains in multilevel parking structures are required to discharge to a combined building sewer system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.

4. Where a hydromechanical grease interceptor serves a food utensil, dishes, pots and pans sink, in accordance with the manufacturer's installation instructions. The branch drain serving the interceptor shall be provided with an emergency floor drain down stream of the interceptor connection, and the branch shall serve only the emergency floor drain and the interceptor. Where the interceptor serves combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the developed length of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm). The food utensil, dishes, pots and pans sink shall be required to connect directly with the interceptor.

Committee Reason: For the Modification: An emergency floor drain would relieve the pressure on the fixture drain to prevent backup into sink should the drain system back up.
For the Proposal: The Committee agreed with the published reason statement. (Vote:13-1)

Assembly Action: None

P120-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Max Weiss, representing Plumbing and Drainage Institute (mweiss@pdionline.org)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

1002.1 Fixture traps. Each plumbing fixture shall be separately trapped by a liquid-seal trap, except as otherwise permitted by this code. The vertical distance from the fixture outlet to the trap weir shall not exceed 24 inches (610 mm), and the horizontal distance shall not exceed 30 inches (610 mm) measured from the centerline of the fixture outlet to the centerline of the inlet of the trap. The height of a clothes washer standpipe above a trap shall conform to Section 802.3.3. A fixture shall not be double trapped.

Exceptions:

1. This section shall not apply to fixtures with integral traps.
2. A combination plumbing fixture is permitted to be installed on one trap, provided that one compartment is not more than 6 inches (152 mm) deeper than the other compartment and the waste outlets are not more than 30 inches (762 mm) apart.
3. Floor drains in multilevel parking structures that discharge to a building storm *sewer* shall not be required to be individually trapped. Where floor drains in multilevel parking structures are required to discharge to a combined *building sewer* system, the floor drains shall not be required to be individually trapped provided that they are connected to a main trap in accordance with Section 1103.1.
4. Where a hydromechanical grease interceptor serves a food utensil, dishes, pots and pans sink, in accordance with the manufacturer ' s installation instructions. The branch drain serving the interceptor shall be provided with an emergency floor drain and trap downstream of the interceptor connection, and the branch shall serve only the emergency floor drain and the interceptor. Where the interceptor serves combination sink of not more than three compartments where the vertical distance from the fixture outlet to the inlet of the interceptor does not exceed 30 inches (762 mm) and the developed length of the waste pipe from the most upstream fixture outlet to the inlet of the interceptor does not exceed 60 inches (1524 mm). The food utensil, dishes, pots and pans sink shall be required to connect directly with the interceptor.

Commenter's Reason: Language implies hydromechanical interceptor has integral water seal (trap). It does not. Therefore adding the words, "and trap" clarifies that a trap is necessary on the branch line.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction
A required emergency floor drain and trap will add cost.

P120-18

P121-18

IPC: 1002.4.1.1

Proposed Change as Submitted

Proponent: Ed Osann, representing Natural Resources Defense Council (eosann@nrdc.org)

2018 International Plumbing Code

Revise as follows

1002.4.1.1 Potable water-supplied trap seal primer valve. A potable water-supplied trap seal primer valve shall supply water to the trap. Water-supplied trap seal primer valves shall conform to ASSE 1018~~.~~, and shall be of the type that uses not more than 30 gallons per year per trap. The discharge pipe from the trap seal primer valve shall connect to the trap above the trap seal on the inlet side of the trap.

Reason: A water-supplied trap seal primer that is unrestricted can discharge 300 to 500 gallons a year to a trap. By comparison, a 2-inch trap, for example, actually requires les than 1/2 gallon per year to maintain the trap seal. Trap seal primer valves that limit the amount of water discharged to 8 gallons per year have been on the market for several years. The maximum of 30 gallons of discharge per year in this proposal is contained in both the 2015 *International Green Construction Code* (IgCC) and the 2015 IAPMO *Green Plumbing and Mechanical Code Supplement*. It is time to bring this common-sense requirement into the IPC to prevent an unnecessary waste of drinking water.

Bibliography: *2015 International Green Construction Code*, International Code Council, 2015, sec. 702.8.2.
2015 Green Plumbing and Mechanical Code Supplement, International Association of Plumbing and Mechanical Officials, 2015, sec. 415.1.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This code change proposal applies to only one of four available compliance paths where trap seal protection is required, and thus will not increase the cost of construction.

P121-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Trap sizes vary and the minimal volume might not be enough for larger traps in some locations. (Vote:12-1)

Assembly Action: **As Submitted**

P121-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Ed Osann, representing Natural Resources Defense Council (eosann@nrdc.org) ; Julius Ballanco, representing Self (jbengineer@aol.com) requests As Submitted.

Commenter's Reason: The committee's concerns about the inadequacy of 30 gallons of water per year to maintain a trap seal are misplaced. The purpose of a trap primer is not to flush the trap, but simply to maintain the seal. Traps evaporate from their surface area, and even a large trap can be maintained with far less than 30 gallons. At an evaporation rate of 12 inches per year, which is generous for indoor ambient conditions, even a 6-inch trap would require less than 6 gallons. 30 gallons a year is more than adequate for this purpose, regardless of trap size or location. Discharges of more than 30 gallons per year are clearly excessive, and at the scale of a large building, multiplied in a community with many large buildings, can add up to significant waste of treated drinking water. This proposal only applies to primer valves using potable water to maintain the trap seal.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This code change proposal applies to only one of four available compliance paths where trap seal protection is required, and thus will not increase the cost of construction.

P121-18

P123-18

IPC: 1003.3.2

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing InSinkErator (JBENGINEER@aol.com)

2018 International Plumbing Code

Revise as follows

1003.3.2 Food waste disposers restriction. A food waste disposer shall not discharge to a grease interceptor.

> **Exception:** A two or three compartment sink that is required to discharge to a grease interceptor shall be permitted to have a food waste disposer provided that the disposer rating is not greater than 1.0 horsepower.

Reason: The commercial food handling industry has requested that small food waste disposers be permitted on two or three compartment sinks to handle the incidental food waste that accumulates in the wash sink after cleaning. The food waste disposer would not be the typical commercial food waste disposer unit handling all of the food waste from the establishment. It would only account for a small portion of food waste remaining during the washing operation.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This would allow an optional installation.

P123-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This could create too much opportunity for too many solids to carry over to the interceptor. (Vote:13-1)

Assembly Action: **None**

P123-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing InSinkErator (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: I proposed the original code change that restricts the discharge of food waste disposer through a grease interceptor. It was pointed out to me after the change was approved that food handling establishments like to install a small food waste disposer on the wash sinks to collect any food particles that make it past the scraping of the dishes or pots and pans. At the end of the wash cycle, the disposer reduces the size of the particle.
If a disposer is not installed, it is feared that large food particle can pass into the grease interceptor. This would be more detrimental than the smaller particle passing through a disposer. By keeping the size of the disposer to 1 hp or less, a food handling establishment is not going to use the disposer as a primary means of disposing of food particles.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This provides an option to the code users. There is no impact to the cost of construction.

Public Comment 2:

Proponent: Max Weiss, representing Plumbing and Drainage Institute (mweiss@pdionline.org)requests Disapprove.

Commenter's Reason: Food waste disposers should not discharge to interceptors. Solids accumulation will modify internal fluid mechanics and interfere with proper function of the interceptor.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Approval of this public comment will nullify the proposal therefore costs of construction will not change.

P123-18

P124-18

IPC: 1003.3.2.1

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing InSinkErator (JBENGINEER@aol.com)

2018 International Plumbing Code

Add new text as follows

1003.3.2.1 Existing installations. For existing installations where the food waste disposer discharges through the grease interceptor, the grease interceptor shall be properly sized to include the discharge from the food waste disposer. The sizing of the grease interceptor shall be based on the continuous flow from the food waste disposer.

Reason: The code was revised to add the prohibition for the discharge of food waste disposers through grease interceptors. However, there are many existing installations where the food waste disposer discharges through the grease interceptor. When the grease interceptor is replaced, the sizing must include the increase load from the food waste disposer.
It is common practice to have the food waste disposer operating in a food handling establishment. When connected to a grease interceptor, this can add a greater load than normal dishwashing sinks. This additional load must be considered when sizing the replacement grease interceptor. The time interval between cleaning of the grease interceptor must also be considered.

In a recently published paper, "A critical review of fat, oil, and grease (FOG) in sewer collection systems: Challenges and control," the importance of properly sizing and maintaining a grease interceptor was identified as a means of reducing the problems of FOG build up in public sewer systems. This proposed change will provide guidance in the proper sizing when an existing system has a food waste disposer discharging to a grease interceptor. This will reduce the contributions of FOG to the public sewer system.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This addresses existing installations and has no impact on the cost.

P124-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Sizing is already covered by the code and by local departments. (Vote:13-1)

Assembly Action: **None**

P124-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing InSinkErator (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: There are a number of installations of grease interceptors that precede the code requirement prohibiting a food waste disposer to discharge through a grease interceptor. There needs to be a sizing requirement in place for the installation of replacement grease interceptors. The code should not rely on the local official to understand the need to size the grease interceptor for the load including the existing food waste disposer.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This provides a means of properly sizing a replacement grease interceptor.

Public Comment 2:

Proponent: Max Weiss, representing Plumbing and Drainage Institute (mweiss@pdionline.org)requests Disapprove.

Commenter's Reason: Food waste disposers should not discharge to an interceptor. Solids accumulation will modify internal fluid mechanics and interfere with proper function. Interceptor sizing is dealt with elsewhere in the code.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Disapproving the proposal will not change the code and thus, will have no impact on the cost of construction.

P124-18

P125-18

IPC: 1106.2, 1106.2.1, Table TABLE 1106.2.1, 1106.2.1.1, 1106.2.1.2, 1106.2.2, 1106.2.2.1

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Self (JBEngineer@aol.com)

2018 International Plumbing Code

Revise as follows

1106.2 ~~Size of storm drain piping.~~Storm drain pipe sizing. ~~Vertical and horizontal~~ The storm ~~drain~~ drainage piping shall be sized ~~based on the flow rate through the roof drain. The flow rate in storm drain piping shall not exceed that specified in Table 1106.2.~~in accordance with Section 1106.2.1 or Section 1106.2.2.

Add new text as follows

1106.2.1 Roof drainage. The rainwater drainage flow rate from the roof surface shall be determined based on the rainfall rate of a 60 minute storm with a 100 year return period and the area of the roof being drained in accordance with Table 1106.2.1.

TABLE 1106.2.1
ROOF AREA DRAINAGE FLOW RATE

Roof Drainage Area (sq. ft.)	Drainage Flow Rate (gpm) Based on Rainfall Rates (in/hr)					
	1	2	3	4	5	6
500	5	10	16	21	26	31
1000	10	21	31	42	52	62
1500	16	31	47	62	78	94
2000	21	42	62	83	104	125
2500	26	52	78	104	130	156
3000	31	62	94	125	156	187
3500	36	73	109	145	182	218
4000	42	83	125	166	208	249
4500	47	94	140	187	234	281
5000	52	104	156	208	260	312
5500	57	114	171	229	286	343
6000	62	125	187	249	312	374
6500	68	135	203	270	338	405
7000	73	145	218	291	364	436
7500	78	156	234	312	390	468
8000	83	166	249	332	416	499
9000	94	187	281	374	468	561
10000	104	208	312	416	519	623
11000	114	229	343	457	571	686
12000	125	249	374	499	623	748

1106.2.1.1 Roof drain. The flow rate used for sizing the roof drainage system shall be not less than the roof drain manufacturer's published flow rate based on a head height of 4 inches (102 mm) of water ponding. Storm drainage piping shall be sized in accordance with Table 1106.2.

1106.2.1.2 Secondary roof drainage. The opening for the secondary roof drainage shall be not less than 2 inches (51 mm) and not more than 5 inches (76 mm) above the bottom opening of the primary roof drain.

1106.2.2 Engineered Roof Drain Flow Rate. Vertical and horizontal storm drain piping shall be sized based on the flow rate through the roof drain. The flow rate used for sizing the storm drainage piping shall be based on the maximum anticipated ponding at the roof drain based on a rainfall rate of a 60 minute storm with a 100 year return period and a 5 minute storm with a 10 year return period. The flow rate used for sizing the storm drainage piping system shall be the manufacturer's published flow rate for the roof drain based on the established maximum anticipated water ponding height. The storm drainage piping shall be sized in accordance with Table 1106.2.

1106.2.2.1 Secondary roof drainage. The discharge through the secondary roof drain shall not be considered when establishing the maximum height of ponding at the primary roof drain. The opening for the secondary roof drainage shall be not less than 2 inches (51 mm) above the bottom opening of the primary roof drain.

Reason: The code was revised a few cycles ago to reflect the research published by the ASPE Research Foundation. ASPE RF and IAPMO cosponsored research on the performance of roof drains in storm drainage systems. There has been a number of requests for a fast sizing method that does not require engineering calculations. The change adds such a fast, cook-book method of sizing the storm drainage piping system.
The ASPE RF research report states the problem associated with a storm drainage system is the improper sizing of the storm drainage pipe. The old sizing method did not account for the high quality of the roof drain. The research report is included with the submittal and can be downloaded at no cost at www.aspe.org.

The code change identifies two methods for sizing the storm drainage system. The first sizing method listed in Section 1106.2.1 Roof Drainage, is the quick sizing method. When using this method, the storm drain pipe may be sized large than the engineered sizing method. The quick method will not result in smaller diameter pipe for the storm drainage system.

These requirements respond to the request by inspectors, contractors, and engineers. They first sizing method identified was developed to provide a cookbook method of sizing rather than conducting a full engineering design analysis. The sizing of the storm drainage system still relies on the values published by the roof drain manufacturers. This data identifies the flow rate based on head height through the roof drain.

Because the method takes a cookbook approach, the secondary roof drainage must be considered. For that reason, secondary roof drainage is required to be between 2 inch and 5 inches above the primary roof drainage. This is calculated into the flow rate sizing values in Table 1106.2.1. It will assure that the system will not exceed the ponding height determined in flow calculations.

The second method, identified as Section 1106.2.2 Engineered Roof Drain Flow Rate, is the current sizing method required by the code. One change has been added to the engineered sizing method. The engineered sizing will require the evaluation of the roof drainage system for a microburst, which is a 5-minute storm with a 10-year return period. While a 100-year storm may appear to be the most drastic storm for sizing a system, a microburst can overpower the storm drainage piping resulting in failure of the piping system. The microburst will typically not have a significant impact on the roof loading compared to a 100-year storm of 60-minute duration. The ASPE RF research report recommends the evaluation of both a 100-year storm of 60 minutes duration and a 10-year storm of 5-minute duration.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
This provides an option for sizing the storm drainage system.

P125-18

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: This proposal needs more coordination with the roofing contractor groups to develop a public comment that refines this proposal. (Vote:9-5)

Assembly Action: **None**

P125-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Max Weiss, representing Plumbing and Drainage Institute (mweiss@pdionline.org)requests As Modified by This Public Comment.

Modify as follows:

2018 International Plumbing Code

1106.2.1.1 Roof drain. The flow rate used for sizing the roof drainage system shall be ~~not less than the roof drain manufacturer's published flow rate~~ based on a head height of 4 inches (102 mm) of water ponding. Storm drainage piping shall be sized in accordance with Table 1106.2.

1106.2.1.2 Secondary roof drainage. The opening for the secondary roof drainage shall be not less than 2 inches (51 mm) and not more than ~~5~~ 4 inches (~~76~~ 101 mm) above the bottom opening of the primary roof drain.

1106.2.2 ~~Engineered~~ Roof ~~Drain~~ Drainage Flow Rate. ~~Vertical and horizontal storm drain piping shall be sized based on the flow rate through the roof drain.~~ The flow rate used for sizing the storm drainage piping shall be based on the maximum anticipated ponding at the roof drain based on a rainfall rate of a 60 minute storm with a 100 year return period and a 5 minute storm with a 10 year return period ~~. The flow rate used for sizing the storm drainage piping system shall be the manufacturer's published flow rate for the roof drain based on the established maximum anticipated water ponding height. The storm drainage piping shall be sized~~ and in accordance with Table 1106.2.

Commenter's Reason: The roof drain fixture should not be used to control drainage rate. Stack configuration is the greatest single variable affecting flow rate. 4" ponding limitation, roof area, rainfall rate determine drainage system requirement in gpm. Roof drain fixture simply has to be capable of that flow at that head.

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 modifications adjusts the proposal to reflect what is common practice in the industry today. Therefore, the proposal as modified will not impact the cost of labor or materials.

Public Comment 2:

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Self (JBEngineer@aol.com)requests As Submitted.

Commenter's Reason: The reason given for the rejection was that the proposal needs to be coordinated with the roofing contractors. The concern with the contractors is the roof load based on the design. While the roofing contractors thought the roof load should be addressed in this proposal, it is unnecessary. Roof loading is already addressed in Section 1101.7. There is no need to duplicate the requirements from that section in this proposal.
The main purpose of this proposal is to add a simplified method of designing the storm drainage system. That is what is provided in the additional design method. While it results in oversizing of the drainage piping, the system will perform without failure. A simplified design option has been requested by code officials, engineers, contractors, and staff.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
This change provides an alternative method for sizing the roof drainage system. Alternatives have no cost impact.

Public Comment 3:

Proponent: Max Weiss, representing Plumbing and Drainage Institute (mweiss@pdionline.org)requests Disapprove.

Commenter's Reason: This proposal and related sections require further development.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Disapproval of this proposal results in the current code not changing. Therefore, the net effect on costs is zero.

P125-18

P126-18

IPC: 1102.6, Chapter 15

Proposed Change as Submitted

Proponent: Julius Ballanco, JB Engineering and Code Consulting, P.C., representing Froet Industries (JBEngineer@aol.com)

2018 International Plumbing Code

Revise as follows

1102.6 Roof Drains. Roof drains shall conform to ASME A112.6.4 or ASME A112.3.1. Roof drains, other than siphonic roof drains, shall be tested and rated in accordance with ASME A112.6.4 or ASPE/IAPMO Z1034.

Add new standard(s) follows

ASPE

American Society of Plumbing Engineers
6400 Shafer Ct., Suite 350
Rosemont IL 60018-4914

ASME/IAPMO 21034-2015:

Test Method for Evaluating Roof Drain Performance

Reason: ASPE/IAPMO Z1034 is the consensus standard for testing and rating roof drains for their flow rate at different ponding heights. The current code requires the manufacturer to publish their flow rates. The flow rates are determined by testing to either of the two standards referenced.
Siphonic roof drains are rated differential with the system designed in accordance with ASPE 45 and the roof drain tested in accordance with ASME A112.6.9.

The testing requirements in the standard are consistent with the results published in the ASPE Research Foundation Roof Drainage Research Report. There are third party laboratories currently testing and certifying roof drains to the ASPE/IAPMO Z1034 standard.

Cost Impact: The code change proposal will increase the cost of construction
There is a cost associated with the testing of roof drains.

Analysis: A review of the standard proposed for inclusion in the code, ASPE/IAPMO 21034-2015, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P126-18

Public Hearing Results

Committee Action: **As Submitted**

Committee Reason: This will answer some questions about roof drains and storm drain system piping requirements in the code. (Vote:14-0)

Assembly Action: **None**

P126-18

Individual Consideration Agenda

Public Comment 1:

Proponent: Max Weiss, representing Plumbing and Drainage Institute (mweiss@pdionline.org)requests Disapprove.

Commenter's Reason: Drainage systems must be sized in accordance with anticipated load and provision for air. Roof drain fixtures must be sized in accordance with drainage system design capacity. Wording in proposal was obtuse and intra-contradictory.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
Disapproval of a proposal will not change the code therefore, the costs of construction will not be impacted.

P126-18

P131-18 Part I

IPC: 1301.1.1 (New), Chapter 15

Proposed Change as Submitted

Proponent: Dave Cantrell, representing The Joint CSA/ICC Rainwater System Design and Installation Consensus Committee (dave.cantrell.codes@gmail.com)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PART I WILL BE HEARD BY THE IPC COMMITTEE. PART II WILL BE HEARD BY THE IRC-PLUMBING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

2018 International Plumbing Code

Add new text as follows

1301.1.1 Alternate compliance path. Systems for nonpotable uses that comply with CSA B805/ICC 805 are deemed to comply with this chapter.

Add new standard(s) follows

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-2018:

Rainwater Harvesting Systems

Reason: This proposal adds the CSA B805/ICC 805 Standard as an alternate compliance path for rainwater to be used in nonpotable applications. The Canadian Standards Association and the International Code Council jointly formed the Rainwater System Design and Installation Consensus Committee (IS-RCSDI) in order to create a Rainwater Harvesting Standard for use in North America. Nonpotable rainwater harvesting systems that conform to this Standard will comply with Chapter 13, thus providing a far more comprehensive guidance document as an alternate compliance path.
While this new Standard addresses rainwater for potable use and stormwater for nonpotable use, neither of which are addressed in Chapter 13, including this Standard in Chapter 14 would not mandate such uses. However, it will provide code officials with the guidance needed for reviewing and inspecting these types of water reuse systems that are becoming more common with ever-increasing water conservation measures.

Here are some necessary provisions that the committee felt obligated to include in this Standard:

1. This Standard addresses roof surface rainwater and stormwater being used as source water. It addresses rainwater intended for use in nonpotable applications as well as potable applications.

2. Recognizing that the risk to public health increases with the number of persons using a rainwater harvesting system, this Standard provides different methods for protecting water based on the influent water quality, the system, and the application. Stormwater runoff is expected to have a higher likelihood of contamination as a result of its flowing overland. Therefore, this Standard specifies additional treatment process requirements for stormwater runoff and does not cover its use for potable water applications.

3. In order to ensure the consideration of the wide range of variables associated with each site, location, design, and application, this Standard requires that a water safety plan be developed for all rainwater harvesting systems. The water safety plan considers the specific challenges and risks presented by the site and associated impact on source water quality, operation of system components, and the risk associated with the end use.

4. Applications for harvested rainwater are separated into four end use tiers that consider the exposure potential through ingestion, inhalation, and skin contact. It further separates these tiers into two groups, one for single-family residential and one for multifamily, commercial and public facilities.

5. This Standard specifies minimum performance criteria for each end use tier in consideration of the health risk and identifies possible treatment process options to meet the specified performance criteria.

6. Based on the expected source water quality, this Standard establishes suitable water quality parameters that are used to substantiate that the treatment process is operating as intended to produce safe water for the specified end use.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposed alternate compliance path is an option provided to the user, not a requirement. Therefore, no added cost is mandated to the user of the code.

Analysis: A review of the standard proposed for inclusion in the code, CSA 805-17/ICC 805-2017, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P131-18 Part I

Public Hearing Results

Committee Action: Disapproved

Committee Reason: Consistency with action on P131 Part II. (Vote:13-1)

Assembly Action: As Submitted

Staff Analysis: P131-18 Part II, an identical proposal to this proposal, was heard by the IRC-PM Committee. The reason for disapproval was "An alternative compliance path to use this standard instead of the code is available through Section R104.11 (alternative methods.)"

P131-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie Feehan, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (pmgcac@iccsafe.org); Dave Cantrell (dave.cantrell.codes@gmail.com); Paul Gulletson (paul.gulletson@csagroup.org)requests As Modified by This Public Comment.

Replace as follows:

2018 International Plumbing Code

1301.1 ~~Scope.~~General. The provisions of Chapter 13 shall govern the materials, design, construction and installation of systems for the collection, storage, treatment and distribution of nonpotable water. For nonpotable rainwater systems, the provisions of CSA B805/ICC 805 shall be an alternative for regulating the materials, design, construction and installation of systems for rainwater collection, storage, treatment and distribution of nonpotable water.The use and application of nonpotable water shall comply with laws, rules and ordinances applicable in the jurisdiction.

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-18:

Rainwater Harvesting Systems

Commenter's Reason: The committee reason for disapproval was that alternative compliance paths are already allowed in Chapter one, Section 105.2. While this is true, Section 105.2 offers no guidance as to what a viable alternative path should be. Providing a specified alternative compliance path gives the code official and the designer a tangible source of design specifications. The committee also thought that a standard for rainwater systems is not appropriately located in Chapter 13, however, Chapter 13 is the only chapter that addresses non-traditional water systems and Chapter 13 includes Section 1303, which covers nonpotable rainwater systems . Based on the committee's reason, the code would never need to specify any alternative compliance requirements, and would always burden the code official with making an equivalency determination with no guidance from the code. The proposed standard, CSA B805/ICC 805 was jointly developed by ICC and the Canadian Standards Association. The committee offered no technical justification for not including the proposed standard in the code.
This public comment is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The proposed language only provides for an option to the user. Because this is not a requirement, there is no added or decreased cost of construction caused by this option being placed on the code.

P131-18 Part I

P131-18 Part II

IRC: P2912.1.1 (New), Chapter 44

Proposed Change as Submitted

Proponent: Dave Cantrell, representing The Joint CSA/ICC Rainwater System Design and Installation Consensus Committee (dave.cantrell.codes@gmail.com)

2018 International Residential Code

Add new text as follows

P2912.1.1 Alternate compliance path. Systems for nonpotable uses that comply with CSA B805/ICC 805 are deemed to comply with Section P2912.

Add new standard(s) follows

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-2018:

Rainwater Harvesting Systems

Reason: This proposal adds the CSA B805/ICC 805 Standard as an alternate compliance path for rainwater to be used in nonpotable applications. The Canadian Standards Association and the International Code Council jointly formed the Rainwater System Design and Installation Consensus Committee (IS-RCSDI) in order to create a Rainwater Harvesting Standard for use in North America, one that will provide further guidance for rainwater to serve both potable and nonpotable uses. Nonpotable rainwater harvesting systems that conform to this Standard will comply with Section P2912, thus providing a far more comprehensive guidance document as an alternate compliance path.
While this new Standard addresses rainwater for potable use and stormwater for nonpotable use, neither of which are addressed in Section P2912, including this Standard in Chapter 44 would not mandate such uses. However, it will provide code officials with the guidance needed for reviewing and inspecting these types of water reuse systems that are becoming more common with ever-increasing water conservation measures.

Here are some necessary provisions that the committee felt obligated to include in this Standard:

1. This Standard addresses roof surface rainwater and stormwater being used as source water. It addresses rainwater intended for use in nonpotable applications as well as potable applications.

2. Recognizing that the risk to public health increases with the number of persons using a rainwater harvesting system, this Standard provides different methods for protecting water based on the influent water quality, the system, and the application. Stormwater runoff is expected to have a higher likelihood of contamination as a result of its flowing overland. Therefore, this Standard specifies additional treatment process requirements for stormwater runoff and does not cover its use for potable water applications.

3. In order to ensure the consideration of the wide range of variables associated with each site, location, design, and application, this Standard requires that a water safety plan be developed for all rainwater harvesting systems. The water safety plan considers the specific challenges and risks presented by the site and associated impact on source water quality, operation of system components, and the risk associated with the end use.

4. Applications for harvested rainwater are separated into four end use tiers that consider the exposure potential through ingestion, inhalation, and skin contact. It further separates these tiers into two groups, one for single-family residential and one for multifamily, commercial and public facilities.

5. This Standard specifies minimum performance criteria for each end use tier in consideration of the health risk and identifies possible treatment process options to meet the specified performance criteria.

6. Based on the expected source water quality, this Standard establishes suitable water quality parameters that are used to substantiate that the treatment process is operating as intended to produce safe water for the specified end use.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposed alternate compliance path is an option provided to the user, not a requirement. Therefore, not added cost

is mandated to the user of the code.

Analysis: A review of the standard proposed for inclusion in the code, CSA B805-18/ICC 805-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P131-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Alternative compliance paths are already provided for under Section R104.11 (Vote:10-10)

Assembly Action: **None**

P131-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie Feehan, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (pmgcac@iccsafe.org); Dave Cantrell (dave.cantrell.codes@gmail.com); Paul Gulletson (paul.gulletson@csagroup.org)requests As Modified by This Public Comment.

Replace as follows:

2018 International Residential Code

P2912.1 General. The provisions of this section shall govern the construction, installation, *alteration*, and repair of rainwater collection and conveyance systems for the collection, storage, treatment and distribution of rainwater for nonpotable applications ~~, as permitted by~~ . For nonpotable rainwater systems, the provisions of CSA B805/ICC 805 shall be an alternative for regulating the materials, design, construction and installation of systems for rainwater collection, storage, treatment and distribution of nonpotable water.The use and application of nonpotable water shall comply with laws, rules and ordinances applicable in the *jurisdiction*.

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-18:

Rainwater Harvesting Systems

Commenter's Reason: The committee reason for disapproval was that alternative compliance paths are already allowed in Chapter one, Section R104.11. While this is true, Section R104.11 offers no guidance as to what a viable alternative path should be. Providing a specified alternative compliance path gives the code official and the designer a tangible source of design specifications. The committee also thought that a standard for rainwater systems is not appropriately located in Section P2912, however, P2912 is the only section that addresses non-traditional water systems. which includes nonpotable rainwater systems. Based on the committee's reason, the code would never need to specify any alternative compliance requirements, and would always burden the code official with making an equivalency determination with no guidance from the code. The proposed standard, CSA B805/ICC 805 was jointly developed by ICC and the Canadian Standards Association. The committee offered no technical justification for not including the proposed standard in the code.
This public comment is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The proposed language only provides for an option to the user. Because this is not a requirement, there is no added or decreased cost of construction caused by this option being placed on the code.

P131-18 Part II

P132-18 Part I

IPC: 1301.1.1 (New), Chapter 15

Proposed Change as Submitted

Proponent: Dave Cantrell, representing The Joint CSA/ICC Rainwater System Design and Installation Consensus Committee (dave.cantrell.codes@gmail.com)

2018 International Plumbing Code

Add new text as follows

1301.1.1 Alternate compliance path. Systems designed for potable uses shall comply with CSA B805/ICC 805.

Add new standard(s) follows

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-2018:

Rainwater Harvesting Systems

Reason: This proposal adds the CSA B805/ICC 805 Standard as an alternate compliance path for rainwater to be used in both potable and nonpotable applications. The Canadian Standards Association and the International Code Council jointly formed the Rainwater System Design and Installation Consensus Committee (IS-RCSDI) in order to create a Rainwater Harvesting Standard for use in North America, one that will provide further guidance for rainwater to serve both potable and nonpotable uses.
Chapter 13 does not address rainwater for potable use, nor does it contain provisions for the use of stormwater for nonpotable use. This Standard provides code officials the guidance needed for reviewing and inspecting these types of water reuse systems that are becoming more common with ever-increasing water conservation measures. For this reason this Standard should be referenced in Chapter 14. It should further be noted that nonpotable rainwater harvesting systems that conform to this Standard will comply with Chapter 13, thus providing a far more comprehensive guidance document as an alternate compliance path.

Here are some necessary provisions that the committee felt obligated to include in this Standard:

1. This Standard addresses roof surface rainwater and stormwater being used as source water. It addresses rainwater intended for use in nonpotable applications as well as potable applications.

2. Recognizing that the risk to public health increases with the number of persons using a rainwater harvesting system, this Standard provides different methods for protecting water based on the influent water quality, the system, and the application. Stormwater runoff is expected to have a higher likelihood of contamination as a result of its flowing overland. Therefore, this Standard specifies additional treatment process requirements for stormwater runoff and does not cover its use for potable water applications.

3. In order to ensure the consideration of the wide range of variables associated with each site, location, design, and application, this Standard requires that a water safety plan be developed for all rainwater harvesting systems. The water safety plan considers the specific challenges and risks presented by the site and associated impact on source water quality, operation of system components, and the risk associated with the end use.

4. Applications for harvested rainwater are separated into four end use tiers that consider the exposure potential through ingestion, inhalation, and skin contact. It further separates these tiers into two groups, one for single-family residential and one for multifamily, commercial and public facilities.

5. This Standard specifies minimum performance criteria for each end use tier in consideration of the health risk and identifies possible treatment process options to meet the specified performance criteria.

6. Based on the expected source water quality, this Standard establishes suitable water quality parameters that are used to substantiate that the treatment process is operating as intended to produce safe water for the specified end use.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposed alternate compliance path is an option provided to the user, not a requirement. Therefore, not added cost

is mandated to the user of the code.

Analysis: A review of the standard proposed for inclusion in the code, CSA 805-18/ICC 805-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P132-18 Part I

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Consistency with action on P131 Part I. Also, Chapter 13 is for nonpotable water systems and this standard is involves potable water. (Vote:13-1)

Assembly Action: **As Submitted**

P132-18 Part I

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie Feehan, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (pmgcac@iccsafe.org); Paul Gulletson (paul.gulletson@csagroup.org); Dave Cantrell (dave.cantrell.codes@gmail.com)requests As Modified by This Public Comment.

Replace as follows:

2018 International Plumbing Code

602.3 ~~Individual~~ Alternative potable water ~~supply.~~supplies. Where a potable public water supply is not available, potable water from one or more of the following individual sources of potable water supply shall be utilized~~.~~:

1. An individual water supply in accordance with Sections 602.3.1 through 602.3.5.1.
2. A rainwater harvesting system in compliance with CSA B805/ICC 805.

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-18:

Rainwater Harvesting

Commenter's Reason: The committee thought that a standard for potable rainwater systems is not appropriately located in Chapter 13. Therefore, this public comment places this potable water alternative source in Section 602 where other potable water systems are regulated.
Another committee reason for disapproval was that alternative compliance paths are already allowed in Chapter one, Section 105.2. While this is true, Section 105.2 offers no guidance as to what a viable alternative path should be. Providing a specified alternative compliance path gives the code official and the designer a tangible source of design specifications. Based on the committee's reason, the code would never need to specify any alternative compliance requirements, and would always burden the code official with making an equivalency determination with no guidance from the code. The proposed standard, CSA B805/ICC 805 was jointly developed by ICC and the Canadian Standards Association.

The committee offered no technical justification for not including the proposed standard in the code.

This public comment is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The proposed language only provides for an option to the user. Because this is not a requirement, there is no added or decreased cost of construction caused by this option being placed on the code.

P132-18 Part I

P132-18 Part II

IRC: P2912.1.1 (New), Chapter 44

Proposed Change as Submitted

Proponent: Dave Cantrell, representing The Joint CSA/ICC Rainwater System Design and Installation Consensus Committee (dave.cantrell.codes@gmail.com)

2018 International Residential Code

Add new text as follows

P2912.1.1 Alternate compliance path. Systems designed for potable uses shall comply with CSA B805/ICC 805.

Add new standard(s) follows

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-18:

Rainwater Harvesting Systems

Reason: This proposal adds the CSA B805/ICC 805 Standard as an alternate compliance path for rainwater to be used in both potable and nonpotable applications. The Canadian Standards Association and the International Code Council jointly formed the Rainwater System Design and Installation Consensus Committee (IS-RCSDI) in order to create a Rainwater Harvesting Standard for use in North America, one that will provide further guidance for rainwater to serve both potable and nonpotable uses.
Section P2912 does not address rainwater for potable use, nor does it contain provisions for the use of stormwater for nonpotable use. This Standard provides code officials the guidance needed for reviewing and inspecting these types of water reuse systems that are becoming more common with ever-increasing water conservation measures. For this reason this Standard should be referenced in Chapter 44. It should further be noted that nonpotable rainwater harvesting systems that conform to this Standard will comply with Section P2912, thus providing a far more comprehensive guidance document as an alternate compliance path.

Here are some necessary provisions that the committee felt obligated to include in this Standard:

1. This Standard addresses roof surface rainwater and stormwater being used as source water. It addresses rainwater intended for use in nonpotable applications as well as potable applications.

2. Recognizing that the risk to public health increases with the number of persons using a rainwater harvesting system, this Standard provides different methods for protecting water based on the influent water quality, the system, and the application. Stormwater runoff is expected to have a higher likelihood of contamination as a result of its flowing overland. Therefore, this Standard specifies additional treatment process requirements for stormwater runoff and does not cover its use for potable water applications.

3. In order to ensure the consideration of the wide range of variables associated with each site, location, design, and application, this Standard requires that a water safety plan be developed for all rainwater harvesting systems. The water safety plan considers the specific challenges and risks presented by the site and associated impact on source water quality, operation of system components, and the risk associated with the end use.

4. Applications for harvested rainwater are separated into four end use tiers that consider the exposure potential through ingestion, inhalation, and skin contact. It further separates these tiers into two groups, one for single-family residential and one for multifamily, commercial and public facilities.

5. This Standard specifies minimum performance criteria for each end use tier in consideration of the health risk and identifies possible treatment process options to meet the specified performance criteria.

6. Based on the expected source water quality, this Standard establishes suitable water quality parameters that are used to substantiate that the treatment process is operating as intended to produce safe water for the specified end use.

Cost Impact: The code change proposal will not increase or decrease the cost of construction
The proposed alternate compliance path is an option provided to the user, not a requirement. Therefore, not added cost

is mandated to the user of the code.

Analysis: A review of the standard proposed for inclusion in the code, CSA B805-18/ICC 805-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

P132-18 Part II

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: Alternative compliance paths are already provided for under Section R104.11 (Vote:10-10)

Assembly Action: **None**

P132-18 Part II

Individual Consideration Agenda

Public Comment 1:

Proponent: Pennie Feehan, representing Plumbing, Mechanical, and Fuel Gas Code Action Committee (pmgcac@iccsafe.org); Dave Cantrell (dave.cantrell.codes@gmail.com); Paul Gulletson (paul.gulletson@csagroup.org)requests As Modified by This Public Comment.

Replace as follows:

2018 International Residential Code

P2602.1 General. The water-distribution system of any building or premises where plumbing fixtures are installed shall be connected to a public water supply. Where a public water-supply system is not available, or connection to the supply is not feasible, potable water from one or more of the following an individual water supply shall be provided.:

1. An individual water supply in accordance with this section.
2. A rainwater harvesting system in compliance with CSA B805/ICC 805.

Individual water supplies shall be constructed and installed in accordance with the applicable state and local laws. Where such laws do not address the requirements set forth in NGWA-01, individual water supplies shall comply with NGWA-01 for those requirements not addressed by state and local laws.

Sanitary drainage piping from plumbing fixtures in buildings and sanitary drainage piping systems from premises shall be connected to a public sewer. Where a public sewer is not available, the sanitary drainage piping and systems shall be connected to a private sewage disposal system in compliance with state or local requirements. Where state or local requirements do not exist for private sewage disposal systems, the sanitary drainage piping and systems shall be connected to an approved private sewage disposal system that is in accordance with the International Private Sewage Disposal Code .

Exception: Sanitary drainage piping and systems that convey only the discharge from bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to connect to a public sewer or to a private sewage disposal system provided that the piping or systems are connected to a system in accordance with Section P2910 or P2911.

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland OH 44131-5516

CSA B805-18/ICC 805-18:

Rainwater Harvesting Systems

Commenter's Reason: The committee thought that a standard for potable rainwater systems is not appropriately located in Section P2912. Therefore, this public comment places this potable water alternative source in Section P2602.1 where other potable water systems are regulated.

Another committee reason for disapproval was that alternative compliance paths are already allowed in Chapter one, Section 104.11. While this is true, Section 104.11 offers no guidance as to what a viable alternative path should be. Providing a specified alternative compliance path gives the code official and the designer a tangible source of design specifications. Based on the committee’s reason, the code would never need to specify any alternative compliance

requirements, and would always burden the code official with making an equivalency determination with no guidance from the code. The proposed standard, CSA B805/ICC 805 was jointly developed by ICC and the Canadian Standards Association.

The committee offered no technical justification for not including the proposed standard in the code.

This public comment is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact: The net effect of the public comment and code change proposal will not increase or decrease the cost of construction
The proposed language only provides for an option to the user. Because this is not a requirement, there is no added or decreased cost of construction caused by this option being placed on the code.

Public Comment 1:

Proponent: Craig Conner, representing self (craig.conner@mac.com)requests As Modified by This Public Comment.

Replace as follows:

2018 International Residential Code

P2913 POTABLE RAINWATER COLLECTION AND DISTRIBUTION SYSTEMS

P2913.1 General. This section shall apply to detached single-family dwellings that use rainwater as potable water. Potable rainwater systems shall meet the requirements of Sections P2913.2 through P2913.9, P2906, and Section 2912.

P2913.2 Roof materials. The following roof materials shall be prohibited for roofs that collect rainwater: shingles with fire retardant, copper, and materials that contain asbestos. Materials that contain lead, including but not limited to flashings and roof jacks, shall be prohibited.

P2913.3 Cross connection. Potable water supplies shall be protected against cross connection with rainwater as specified in P2902.1.

P2913.4 Disinfection. Disinfection shall be provided by at least one of the following:

1. Ultraviolet (UV) light providing at least 40 mJ/cm2 at 254 nm for the highest water flow rate. A UV sensor with visible alarm, audible alarm, or water shutoff shall be triggered when the UV light is below the minimum at the sensor. In addition filtration no greater than 5 µm shall be located upstream of the UV light or
2. filtration no greater than 0.2 µm , or
3. other approved disinfection

P2913.5 Non-contaminating materials. Materials and systems that collect, convey, pump, or store rainwater for potable rainwater systems shall comply with NSF 53, NSF 61 or equivalent.

P2913.6 Water quality. The quality of the water at the point of use shall be verified in accordance with the requirements of the jurisdiction.

P2913.7 Sunlight. The rainwater storage shall not admit sunlight.

P2913.8 Pipe color. Potable rainwater pipe shall not be required to be purple post disinfection.

Commenter's Reason: Chapter 29 does not currently address rainwater for potable use. Proposals P131 and P132 proposed a new standard on rainwater use, but was disapproved by the committees in four separate votes. Section P2911 of the IRC already covers non-potable rainwater. This proposal adds requirements specific to potable rainwater. This proposal applies only to single-family residences.
The requirements in this proposal are simple.

-- The existing Section 2906 on Materials, Joints and Connections is required. The requirements for non-potable rainwater already in Section 2912 are also required for potable rainwater; debris excluder, roof washer, gutters, inspections, manuals, etc. (P2913.1)

--Roof materials that are not suitable for potable rainwater collection are prohibited (P2913.2).

--Cross connection that would allow rainwater to flow back into other water supply systems is prohibited (P2913.3).

--Disinfection to address biological contaminants is required, with UV light being by far the most common; however microfiltration and other options are allowed (P2913.4).

--Potable rainwater systems have components upstream of the potable water that must not contaminate the incoming water. The citied standards (NSF 53 on Drinking Water Treatment Units and NSF 61 on Drinking Water System Components) are already used in Chapter 29. (P2912.5) The Safe Drinking Water Act is a Federal Law that requires much lower levels of lead in plumbing products.

--Water quality is required to meet the quality requirements of the jurisdictions using language similar to the existing code (P2912.6).

--Sunlight in the rainwater tank would allow algae to grow, so it is prohibited (P2913.7).

--Purple pipe would not be required after disinfection because post-disinfection these pipes carry only potable water (P2912.8).

This proposal replaces the rainwater standard originally proposed. Even if the new rainwater standard were only an option, the proposed rainwater standard would need to be understandable to code enforcement staff. A few examples from the standard originally proposed- there are multiple uses of “should” and “guidance” instead of “shall” or mandatory language. For example in Section 5..1.1 item #1 says “Where water is used for public drinking water supplies, the authority having jurisdiction should be consulted for specific regulatory requirements for water quality.” The word “should” is inappropriate. Requirements for the authority having jurisdiction are not optional. Also, the required “Water Safety Plan” is poorly defined and mostly discussed in non-mandatory sections. For example, Annex D on the Water Safety Plan is “informative”.

Code requirements for rainwater need to be usable. Please approve this replacement proposal.

Doug Pushard and Darrel McMaster contributed greatly to this public comment.

Cost Impact: The net effect of the public comment and code change proposal will increase the cost of construction Construction of rainwater collection and storage will add cost. The added cost will be strongly dependent on the size of the system. Use of rainwater systems will likely reduce the costs of operating the home.

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