



Uniform Swimming Pool, Spa and Hot Tub Code®

2020 TECHNICAL COMMITTEE
MEETING MONOGRAPH

TELECONFERENCE | MAY 18, 2020



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**2020 Uniform Swimming Pool, Spa & Hot Tub Code
Technical Committee Teleconference Meeting
May 18, 2020**

AGENDA

- I. Call to Order
- II. Chairman Comments
- III. Announcements
- IV. Self-Introductions
- V. Review and Approval of Agenda
- VI. Approval of Minutes from Previous Meeting
(June 18, 2019 – Ontario, CA)
- VII. Discussion of Public Comments to the Swimming Pool, Spa & Hot
Tub Code
- VIII. Other Business
- IX. Future Meetings
- X. Adjournment



TENTATIVE ORDER OF DISCUSSION

2020 PROPOSED PUBLIC COMMENTS TO THE UNIFORM SWIMMING POOL, SPA & HOT TUB CODE

The following is the tentative order of discussion on which the public comments will be discussed at the Technical Committee Meeting. Proposed public comments that are grouped together are those that are both indented and separated by lines. Indented public comments are those being discussed out of numerical order.

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**Uniform
Swimming Pool,
Spa & Hot Tub
Code
Public Comments**



CODES ADMINISTRATION

Proposals

Item #: 001

USPSHTC 2021 Section: 205.0

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Add new text

205.0 – C –

Circulation System. The equipment, components, and appurtenances used to circulate the water in a pool, spa or hot tub and may include, but is not limited to, heaters, chemical feeding devices, valves, gauges, strainers, filters, meters, skimmers, fittings, and pumps. The equipment, components and appurtenances, when connected, perform as a coordinated system for maintaining water quality and sanitary swimming pools, spas or hot tubs.

SUBSTANTIATION:

The proposed definition is being added for clarification on the term “circulation system” and what the term encompasses. The term is used throughout the code and therefore requires a statement of meaning. The circulation system of a pool is responsible for the flow of water to and from the pool and helps to maintain adequate water quality. Systems include, but are not limited to, heaters, chemical feeding devices, valves, gauges, strainers, filters, meters, skimmers, fittings, and pumps. Because the system encompasses so many components, it is important to include such examples within the definition to provide clarity for the end user. The definition will further enhance the code and provides clarification for the terminology used.

COMMITTEE ACTION: ACCEPT AS AMENDED BY THE TC

Amend proposal as follows:

205.0 – C –

Circulation System. The equipment, components, and appurtenances used to circulate the water in a pool, spa or hot tub and may include, but is not limited to, heaters, chemical feeding devices, valves, piping, gauges, strainers, filters, meters, skimmers, fittings, and pumps. The equipment, components and appurtenances, when connected, perform as a coordinated system for maintaining water quality and sanitary swimming pools, spas or hot tubs.

COMMITTEE STATEMENT:

The proposed terminology is being modified to include "piping" as an additional listed component since piping is a substantial part of the circulation system.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 205.0

Item #: 001

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:
Revise text

Request to accept the code change proposal **as modified** by this public comment.

205.0 – C –

Circulation System. The equipment, components, and appurtenances used to circulate the water in a pool, spa or hot tub and may include, but is not limited to, heaters, chemical feeding devices, valves, piping, gauges, strainers, filters, meters, surface skimmers, fittings, and pumps. The equipment, components and appurtenances, when connected, perform as a coordinated system to maintain water quality, provide sanitary water conditions, and heat water for ~~maintaining water quality and sanitary~~ swimming pools, spas or hot tubs.

SUBSTANTIATION:

Throughout the USPSHTC, the term “surface skimmer” is used rather than “skimmer.” For consistency and clarity, the above revision is being submitted.

Furthermore, the circulation system of a swimming pool, spa or hot tub is not only used to maintain water quality and sanitize the water, but it also is used to heat the water to maintain temperatures specified within this code. For this reason, the revision is necessary.



CODES ADMINISTRATION

Proposals

Item #: 002

USPSHTC 2021 Section: 206.0

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Add new text

206.0 – D –

Deck. An area attached to or directly adjacent to a swimming pool, spa, hot tub or combination thereof that is installed for the purpose of providing an area for walking, sitting, or standing.

SUBSTANTIATION:

The term "deck" should be defined as it is commonly used throughout the USPSHTC with listed provisions. Decks serve various purposes including providing a safe area for exiting and entering a pool or spa as well as providing safe walkways around the perimeter of a pool or spa.

The provided definition ensures that the location and purpose of decks are clear for proper application of listed provisions.

COMMITTEE ACTION: ACCEPT AS AMENDED BY THE TC

Amend proposal as follows:

206.0 – D –

Deck. An area attached to, ~~or~~ directly adjacent, and/or serving to a swimming pool, spa, hot tub or combination thereof that is installed for the purpose of providing an area for walking, sitting, or standing for the users.

COMMITTEE STATEMENT:

The definition is being modified to clarify that the deck "serves" a pool, spa, hot tub or combination thereof. Additionally, the definition is being modified to show "for the users" as this is who will be using the deck area.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 206.0

Item #: 002

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:

Revise text

Request to accept the code change proposal **as modified** by this public comment.

206.0 – D –

Deck. An **unobstructed** area attached to, directly adjacent, and/or serving a swimming pool, spa, hot tub or combination thereof that is installed for the purpose of providing an area for walking, sitting, or standing for the users.

SUBSTANTIATION:

Current code language requires decks to have a specified unobstructed width. Including this distinction further clarifies for the end user that the deck area is meant to serve as an area for walking, sitting, or standing around the pool or spa perimeter excluding platforms, diving boards, slides, lifeguard chairs, handrails, furniture and/or planters.



CODES ADMINISTRATION

Proposals

Item #: 003

USPSHTC 2021 Section: 208.0

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Add new text

208.0 – F –

Filter. A porous medium that removes impurities, unwanted material, or undissolved particles as water passes through.

Cartridge Filter. (remaining text unchanged)

Diatomite Filter. (remaining text unchanged)

High-Rate Sand Filter. (remaining text unchanged)

Rapid Sand Filter. (remaining text unchanged)

Skim Filter. (remaining text unchanged)

SUBSTANTIATION:

A general definition for “filter” has been added as the term is used throughout the code. Furthermore, the existing definitions for the various types of filters used throughout the USPSHTC have been relocated below the general definition. This will assist the end user in locating all filter definitions under one location while being able to compare the differences.

COMMITTEE ACTION: ACCEPT AS AMENDED BY THE TC

Amend proposal as follows:

208.0 – F –

Filter. A porous medium that removes impurities, unwanted material, or undissolved particles as water passes through component of the circulation system that houses the filter media, cartridges, or elements.

Cartridge Filter. (remaining text unchanged)

Diatomite Filter. (remaining text unchanged)

High-Rate Sand Filter. (remaining text unchanged)

Rapid Sand Filter. (remaining text unchanged)

Skim Filter. (remaining text unchanged)

COMMITTEE STATEMENT:

The definition has been amended to clarify the distinction between filters and filter media. The filter is a component of the circulation system and not simply a porous medium.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 208.0

Item #: 003

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:
Revise text

Request to accept the code change proposal **as modified** by this public comment.

208.0 – F –

Filter. A component of the circulation system that houses the filter media, cartridges, or elements.

Cartridge Filter. A filter ~~which passes water through a disposable fibrous element or cartridge, where undissolved particles and debris are removed, that operates through a disposable cartridge.~~ There are two general types:

- (1) The surface or area type where the suspended matter is removed from the surface; and
- (2) The depth type in which the interstices vary from large to small in depth.

SUBSTANTIATION:

The additional language provides a clearer understanding of what a cartridge filter does and how it functions. Including the term “fibrous element” adds more technical language and further enhances the terminology listed. Simply stating “a filter that operates through a disposable cartridge” is not sufficient.



CODES ADMINISTRATION

Proposals

Item #: 004

USPSHTC 2021 Section: 208.0

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Add new text

208.0 – F –

Flume. A narrow channel, ravine or tubular structure typically flowing with water and may incorporate twists and turns to direct the path of travel and influence the rate of descent of the rider. Also known as a water slide or water chute.

SUBSTANTIATION:

The proposed term is being added as “flumes” is used throughout the code. The addition of this definition will clarify that the provisions for flumes may apply to curves, turns, valleys, dips and exits. Flumes are installed in many aquatic facilities and are used frequently. Clarification on the term would make such provisions clearer for the end user. The addition further enhances the code and provides clarification on the term.

COMMITTEE ACTION: ACCEPT AS AMENDED BY THE TC

Amend proposal as follows:

208.0 – F –

Flume. A ~~narrow~~ open and/or closed channel, ravine or tubular structure typically flowing with water and may incorporate twists and turns to direct the path of travel and influence the rate of descent of the rider. Also known as a water slide or water chute.

COMMITTEE STATEMENT:

The proposed terminology is being modified to specify that the structure of a flume may be open, closed, or a combination thereof. Additionally, the term “narrow” is being removed from the definition as flumes may be wide.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 208.0

Item #: 004

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:

Revise text

Request to accept the code change proposal **as modified** by this public comment.

208.0 – F –

Flume. An open and/or closed inclined channel, ravine or tubular structure typically flowing with water and may incorporate twists and turns to direct the path of travel and influence the rate of descent of the rider. Also known as a water slide or water chute.

SUBSTANTIATION:

The addition of “inclined” to the definition provided is needed since flumes are typically slides or channels used to “influence the rate of descent of the rider” and adding “incline” further supports this language.



CODES ADMINISTRATION

Proposals

Item #: 005

USPSHTC 2021 Section: 209.0

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Add new text

209.0 – G –

Gutter. A trough, channel, or depression which collects water and diverts it to a drain.

SUBSTANTIATION:

Gutters require further clarification as they are referred to in Sections 402.10, 404.10, and 410.5. Swimming pool gutters may collect debris and oil from the water surface or serve to recirculate and play a role in maintaining water quality of pools. The addition of such language is necessary as it further improves the code.

COMMITTEE ACTION: REJECT

COMMITTEE STATEMENT:

The proposed terminology is not specific to gutters installed for the purpose of serving a pool, spa, hot tub, or combination thereof. Furthermore, the proposed definition is too vague and does not clearly define the purpose of gutters. For these reasons, the proposal is being rejected.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 209.0

Item #: 005

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:
Add new text

Request to **replace** the code change proposal by this public comment.

209.0 – G –

Gutter. An overflow trough along the edge of a swimming pool, spa or hot tub through which floating debris and oils flow.

SUBSTANTIATION:

The proposed terminology for “gutter” addresses the Technical Committee’s concerns. The listed definition now includes what a gutter serves and its purpose.



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CODES ADMINISTRATION

Proposals

Item #: 006

USPSHTC 2021 Section: 216.0

SUBMITTER: Alison Osinski
Aquatic Consulting Services

RECOMMENDATION:
Add new text

216.0 -N-

Natatorium. A building containing a swimming pool, spa, hot tub or combination thereof.

SUBSTANTIATION:

The term natatorium is used throughout the code and is currently the title of Section 416.0. Defining this term further enhances the code and provides clarity for the end user and the AHJ.

COMMITTEE ACTION: ACCEPT AS AMENDED BY THE TC

Amend proposal as follows:

216.0 -N-

Natatorium. A building, or portion thereof, containing a swimming pool, spa, hot tub or combination thereof.

COMMITTEE STATEMENT:

The proposed terminology is being modified to include "or portions thereof" to clarify that only the building area containing a pool, spa, or hot tub is considered to be a natatorium.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 216.0

Item #: 006

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:
Revise text

Request to accept the code change proposal **as modified** by this public comment.

216.0 -N-

Natatorium. A building, or portion thereof, containing a swimming pool, spa, hot tub or combination thereof. Also known as an indoor aquatic facility.

SUBSTANTIATION:

Natatoriums are technically rooms, venues or facilities housing pools, spas or hot tubs. Within the USPSHTC, the term “indoor aquatic facility” is used with listed provisions for ventilation, humidity, dew points, and pressure differentials. These provisions are clearly applicable to natatoriums. For clarity, the proposed revision is necessary. In order to protect the structural integrity of buildings utilized as aquatic venues as well as ensure adequate ventilation, the end user and inspector must associate the two terms.



CODES ADMINISTRATION

Proposals

Item #: 007

USPSHTC 2021 Section: 221.0

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Add new text

221.0 - S -

Safety Cover. A structure, fabric or assembly which extends over the entire water surface of a pool, spa or hot tub and is typically anchored around the pool perimeter for the purpose of preventing entry; may serve to conserve energy, reduce heat loss, or reduce water and chemical evaporation.

SUBSTANTIATION:

A definition for "safety cover" is being proposed as safety covers are referred to in Section 803.5 and Section 806.0 with listed provisions. The inclusion of this new definition provides clarity for the end user.

Safety covers serve multiple purposes of which include keeping pets and small children out of the pool, reducing pool heating costs, preventing debris from accumulating within the pool, and reducing water and chemical evaporation. Safety covers may be made of various materials depending upon the needs of the end user and are typically anchored around the pool perimeter.

COMMITTEE ACTION: REJECT

COMMITTEE STATEMENT:

The Technical Committee agrees that a definition for "safety cover" is necessary within the code, but the provided definition needs additional work. The definition provided to the Technical Committee does not match what is found in ASTM F1346.

Additionally, the definition is too specific as it includes what purpose safety covers may serve. The definition provided does not include the various types of covers, how they operate, or other specific requirements such as the need to be removed before allowing access to the pool, spa or hot tub.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 8 NEGATIVE: 1 NOT RETURNED: 1 Fruia

EXPLANATION OF NEGATIVE:

OSINSKI: Language needs to define how it locks to prevent access, drains water, and supports weight.

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 221.0

Item #: 007

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:
Add new text

Request to **replace** the code change proposal by this public comment.

221.0 - S -

Safety Cover. A barrier or assembly covering the entire water surface of a swimming pool, spa or hot tub which includes anchoring mechanisms and serves as a means of preventing unauthorized access to the body of water.
There are two general types:
(1) The manual type where hand-operation is required for application.
(2) The powered type utilizing a motorized mechanism.

SUBSTANTIATION:

The terminology provided for “safety cover” addresses the Technical Committee’s concerns expressed within the Committee Statement. The new terminology now more closely reflects what is displayed in ASTM F1346 for “safety covers.”

The need for safety covers to be removed before bather use of a swimming pool, spa or hot tub was not included as this is a provision rather than a part of a definition. This requirement is already listed within the code under Section 806.1 (Safety Covers, General).



CODES ADMINISTRATION

Proposals

Item #: 008

USPSHTC 2021 Section: 221.0

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Add new text

221.0 - S -

Strainer. A device which water passes through with the purpose of preventing the passage of lint, hair, debris, or appendages. Such devices are used on suction inlets to pumps, swimming pools, spas, hot tubs, and on open pipes.

SUBSTANTIATION:

Strainers provide a means of preventing any unwanted material from entering the piping system to which they are connected, and they play a role in protecting the piping system from clogs or blockages.

Provisions for strainers are included in three main sections of this code, and strainers are referred to frequently throughout the code. The proposed definition is necessary for these reasons and would further provide clarity for the end user in regard to the purpose and function of strainers.

COMMITTEE ACTION: REJECT

COMMITTEE STATEMENT:

The Technical Committee agrees that the definition is necessary but needs additional work. There are various types of strainers that are not included within the definition provided.

Furthermore, the definition contains specific requirements that are more suitable for the enforceable provisions of the code.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 221.0

Item #: 008

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:

Add new text

Request to replace the code change proposal by this public comment.

221.0 - S -

Strainer. A fitting through which water flows and solids are filtered and separated to prevent passage.

SUBSTANTIATION:

The proposed definition for strainer is sufficient for the end user to understand the function and purpose of a strainer. Although various types of strainers exist, only the term “strainer” and “inline strainer” are used within the USPSHTC. For this reason, the above terminology is sufficient and necessary.



CODES ADMINISTRATION

Proposals

Item #: 010

USPSHTC 2021 Section: 301.2.2

SUBMITTER: David Mann
Self

RECOMMENDATION:
Revise text

301.0 General.

301.2 Minimum Standards. (remaining text unchanged)

301.2.2 Standards. Standards listed or referred to in this chapter or other chapters cover materials that will conform to the requirements of this code, where used in accordance with the limitations imposed in this or other chapters thereof and their listing. Where a standard covers materials of various grades, weights, quality, or configurations, the portion of the listed standard that is applicable shall be used. Design and materials for special conditions or materials not provided for herein shall be permitted to be used by special permission of the Authority Having Jurisdiction after the Authority Having Jurisdiction has been satisfied as to their adequacy. A list of swimming pool, spa and hot tub standards that appear in specific sections of this code is referenced in Table 1001.1. Standards referenced in Table 1001.1 shall be applied as indicated in the applicable referenced section. A list of additional approved standards, publications, practices and guides that are not referenced in specific sections of this code appear in Table 1001.2. ~~The documents indicated in Table 1001.2 shall be permitted in accordance with Section 301.3.~~

SUBSTANTIATION:

Section 301.2.2 is being revised to allow the end user to use an applicable approved standard in Table 1001.2 without the additional step of an alternate method and material. All standards in Table 1001.2 have been vetted and have a place in the code. To prevent confusion in the field and to prevent contradictions within the USPSHTC, Section 301.2.2 must be revised as the standards in Table 1001.2 can be used, where applicable, without additional approval in accordance with Section 301.3.

COMMITTEE ACTION: REJECT

COMMITTEE STATEMENT:

The proposed change is being rejected as it negates the current provisions for alternate methods and materials. The Technical Committee agrees that the Authority Having Jurisdiction should determine when and where the standards in Table 1001.2 are applicable.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 301.2.2

Item #: 010

SUBMITTER: Adam Segura
Self

Comment #: 1

RECOMMENDATION:

Revise text

Request to accept the code change proposal as submitted by this public comment.

SUBSTANTIATION:

The revisions to Section 301.2.2 are being resubmitted to correlate with the language approved in Item #048 of the 2019 UMC ROC. The approval of such change allows for the use of an applicable approved standard in Table 1001.2 (Standards, Publications, Practices, and Guides) without the additional requirement of compliance with Section 301.3 (Alternative Materials and Methods of Construction Equivalency). This is necessary since the documents listed in Table 1001.2 have already been reviewed by the Technical Committee and deemed appropriate for use based on the listed application within the table.



CODES ADMINISTRATION

Proposals

Item #: 011

USPSHTC 2021 Section: 301.4.4, Table 1001.1

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

RECOMMENDATION:
Revise text

301.0 General.

301.4 Swimming Pools in Flood Hazard Areas. (remaining text unchanged)

301.4.4 Swimming Pools Located in Coastal High Hazard Areas. Where pools are located in coastal high hazard areas, swimming pools shall be in accordance with ASCE 24 and the following requirements:

- (1) Be elevated so that the lowest horizontal structural member is elevated to or above the design flood elevation.
- (2) Be designed and constructed to break away during design flood conditions without producing debris capable of causing significant damage to any structure.
- (3) Be sited to remain in the ground during design flood conditions without obstructing flow that results in damage to adjacent structures.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
<u>ASCE 24-2014</u>	<u>Flood Resistant Design and Construction</u>	<u>Miscellaneous</u>	<u>301.4.4</u>

(portions of table not shown remain unchanged)

Note: ASCE 24 meets the requirements for a mandatory reference standard in accordance with Section 15.0 of IAPMO's Regulations Governing Consensus Development of the Uniform Solar, Hydronics & Geothermal and Swimming Pool, Spa & Hot Tub Codes.

SUBSTANTIATION:

Section 301.4.4 is being revised to include standard ASCE 24 as it pertains to flood resistant design and construction of structures located in flood hazard areas. Such addition is necessary as this standard provides specifications on minimum elevations for lowest floors, flood damage resistant material, and various flood proofing methods to incorporate in flood hazard areas. The inclusion of this standard further enhances the code and helps to maintain building integrity in the event of flooding.

COMMITTEE ACTION: ACCEPT AS AMENDED BY THE TC

Amend proposal as follows:

301.0 General.

301.4 Swimming Pools in Flood Hazard Areas. (remaining text unchanged)

301.4.4 Swimming Pools Located in Coastal High Hazard Areas. Where pools are located in coastal high hazard areas, swimming pools shall be in accordance with ASCE 24 and one of the following requirements:

- (1) Be elevated so that the lowest horizontal structural member is elevated to or above the design flood elevation.
- (2) Be designed and constructed to break away during design flood conditions without producing debris capable of causing significant damage to any structure.
- (3) Be sited to remain in the ground during design flood conditions without obstructing flow that results in damage to adjacent structures.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
ASCE 24-2014	Flood Resistant Design and Construction	Miscellaneous	301.4.4

(portions of table not shown remain unchanged)

COMMITTEE STATEMENT:

The proposed language is being modified to show "one of the following," as ASCE 24 only requires one of the following from the list. The language is being modified to comply with ASCE 24.

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 302.0 - 302.5

Item #: 011

SUBMITTER: Joel Nunez
Upland Pool Supply LLC

Comment #: 1

RECOMMENDATION:

Revise text

Request to accept the code change proposal as modified by this public comment.

~~301.4~~**302.0 Swimming Pools in Flood Hazard Areas.**

302.1 General. Where located in flood hazard areas, aboveground swimming pools, inground swimming pools that involve the placement of earthen fill, and onground swimming pools shall comply with ~~this section~~ Section 302.2 through Section 302.5. Aboveground and inground swimming pools shall be designed and installed to withstand flood associated loads. Where swimming pool liners and membranes are installed, such liners and membranes shall be anchored to either the structural frame or the ground.

~~301.4.1~~**302.2 Controls, Equipment, Appurtenances, and Associated Components.** Where swimming pools are located in flood hazard areas:

- (1) - (3) (remaining text unchanged)
- (4) Electrical equipment and components installed below the design flood elevation shall be waterproof and shall be in accordance with Section 603.0.

~~301.4.2~~**302.3 Swimming Pools Located in Floodways.** (remaining text unchanged)

~~301.4.3~~**302.4 Swimming Pools Located ~~w~~Where Floodways ~~h~~Have ~~n~~Not ~~b~~Been Designated.** (remaining text unchanged)

~~301.4.4~~**302.5 Swimming Pools Located in Coastal High Hazard Areas.** (remaining text unchanged)

(renumber remaining sections)

(Section 603.0 is being shown for information purposes only)

603.0 Electrical Systems.

603.1 General. The design, installation, alteration, modification, construction, maintenance, and testing of electrical systems and equipment associated with a swimming pool, spa, or hot tub shall comply with NFPA 70.

SUBSTANTIATION:

The above sections are being moved as these provisions currently seem misplaced in their current location. The “General” section was added to further support this relocation.

The additional language in the general section is being included to ensure that both aboveground and inground pools are designed and installed to resist anticipated flood associated loads. Furthermore, the language covering membranes and liners has been added to address such materials and their installation as seen in industry standards and various local codes. By anchoring the membranes and liners, it ensures that such materials do not pose as any hazards and are prevented from being carried away in the event of flooding.

The requirement for electrical components to be made waterproof when such components are installed below the design flood elevation is necessary for safety reasons. This requirement is also in compliance with previously accepted standard ASCE 24 (Flood Resistant Design and Construction). Additionally, compliance with Section 603.0 ensures that all electrical equipment and components are installed in accordance with NFPA 70 (National Electric Code) .



CODES ADMINISTRATION

Proposals

Item #: 012

USPSHTC 2021 Section: Table 307.1, Table 1001.1

SUBMITTER: Adam Segura
Self

RECOMMENDATION:
Revise text

TABLE 307.1
MATERIALS FOR BUILDING SUPPLY, WATER DISTRIBUTION,
AND CIRCULATION SYSTEM PIPING AND FITTINGS

MATERIAL	BUILDING SUPPLY PIPE AND FITTINGS	WATER DISTRIBUTION PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
PEX	X	X	ASTM F876, ASTM F877, CSA B137.5, AWWA C904*	ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ~~ASTM F1961~~ , ASTM F2080, ASTM F2159, ASTM F2735, CSA B137.5
PEX-AL-PEX	X	X	ASTM F1281, ~~ASTM F2262~~ , CSA B137.10	ASTM F1281, ASTM F1974, ASTM F2434, CSA B137.10

(portions of table not shown remain unchanged)

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
~~ASTM F1961- 2009~~	~~Metal Mechanical Cold Flare Compression Fittings with Disc Spring for Crosslinked Polyethylene (PEX) Tubing (WITHDRAWN)~~	~~Fittings~~	~~Table 307.1~~
~~ASTM F2262- 2009~~	~~Crosslinked Polyethylene/Aluminum/ Crosslinked Polyethylene Tubing OD Controlled SDR9 (WITHDRAWN)~~	~~Piping, Plastic~~	~~Table 307.1~~

(portions of table not shown remain unchanged)

SUBSTANTIATION:

The proposed modification removes reference to ASTM F1961 and ASTM F2262 as the promulgator has withdrawn these standards.

COMMITTEE ACTION: ACCEPT AS SUBMITTED

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** Table 307.1, Table 1001.1, Table 1001.2

Item #: 012

SUBMITTER: Andrew Todd
V&T Carbonic Inc.

Comment #: 1

RECOMMENDATION:
Revise text

Request to accept the code change proposal **as modified** by this public comment.

TABLE 307.1
MATERIALS FOR BUILDING SUPPLY, WATER DISTRIBUTION,
AND CIRCULATION SYSTEM PIPING AND FITTINGS

MATERIAL	BUILDING SUPPLY PIPE AND FITTINGS	WATER DISTRIBUTION PIPE AND FITTINGS	REFERENCED STANDARD(S) PIPE	REFERENCED STANDARD(S) FITTINGS
Copper and Copper Alloys	X	X	ASTM B42, ASTM B43 , ASTM B75, ASTM B88, ASTM B135 , ASTM B251, ASTM B302, ASTM B447	ASME B16.15, ASME B16.18, ASME B16.22, ASME B16.26, ASME B16.50² , ASME B16.51, ASSE 1061 , ASTM F3226 , IAPMO PS 117
CPVC	X	X	ASTM D2846, ASTM F441, ASTM F442, CSA B137.6	ASSE 1061 , ASTM D2846, ASTM F437, ASTM F438, ASTM F439, ASTM F1970, CSA B137.6
PE	X ^{*1}	-	ASTM D2239, ASTM D2737, ASTM D3035, AWWA C901, CSA B137.1	ASTM D2609, ASTM D2683, ASTM D3261, ASTM F1055, CSA B137.1
PE-RT	X	X	ASTM F2769, CSA B137.18	ASTM D3261 , ASTM F1055 , ASSE 1061 , ASTM F1807, ASTM F2098, ASTM F2159, ASTM F2735, ASTM F2769, CSA B137.18
PEX	X	X	ASTM F876, ASTM F877, CSA B137.5, AWWA C904 ^{*1}	ASSE 1061, ASTM F877, ASTM F1807, ASTM F1960, ASTM F2080, ASTM F2159, ASTM F2735, CSA B137.5
PVC	X ^{*1}	-	ASTM D1785, ASTM D2241, AWWA C900	ASTM D2464, ASTM D2466, ASTM D2467, ASTM F1970, AWWA C907
Stainless Steel	X	X	ASTM A269, ASTM A312, ASTM A554 , ASTM A778	ASTM F3226 , IAPMO PS 117

Notes:

^{*1} For building supply or exterior cold-water applications, not for water distribution piping.

² [For brazed fittings only.](#)

(portions of table not shown remain unchanged)

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
<u>ASME B16.50 - 2018</u>	<u>Wrought Copper and Copper Alloy Braze-Joint Pressure Fittings</u>	<u>Fittings</u>	<u>Table 307.1</u>
<u>ASTM A554 – 2016</u>	<u>Welded Stainless Steel Mechanical Tubing</u>	<u>Piping</u>	<u>Table 307.1</u>
<u>ASTM A778/A778M – 2016</u>	<u>Welded, Unannealed Austenitic Stainless Steel Tubular Products</u>	<u>Piping</u>	<u>Table 307.1</u>
<u>ASTM B135/B135M – 2017</u>	<u>Seamless Brass Tube</u>	<u>Piping</u>	<u>Table 307.1</u>
<u>ASTM F3226/F3226M – 2019</u>	<u>Metallic Press-Connect Fittings for Piping and Tubing Systems</u>	<u>Fittings</u>	<u>Table 307.1</u>
<u>AWWA C907 - 2017</u>	<u>Injection-Molded Polyvinyl Chloride (PVC) Pressure Fittings, 4 In. Through 12 In. (100 mm Through 300 mm), for Water, Wastewater, and Reclaimed Water Service</u>	<u>Fittings</u>	<u>Table 307.1</u>
<u>CSA B137.18 – 2017</u>	<u>Polyethylene of Raised Temperature Resistance (PE-RT) Tubing Systems for Pressure Applications</u>	<u>Piping, Fittings</u>	<u>Table 307.1</u>
<u>IAPMO PS 117 – 2019</u>	<u>Press Connections</u>	<u>Fittings</u>	<u>Table 307.1</u>

(portions of table not shown remain unchanged)

Note: The above standards meet the requirements for mandatory reference standards in accordance with Section 15.0 of IAPMO's Regulations Governing Consensus Development of the Uniform Solar, Hydronics & Geothermal and Swimming Pool, Spa & Hot Tub Codes.

**TABLE 1001.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES**

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
~~ASME B16.50 – 2018~~	~~Wrought Copper and Copper Alloy Braze-Joint Pressure Fittings~~	~~Fittings~~
~~ASTM B135/B135M – 2017~~	~~Seamless Brass Tube~~	~~Piping, Copper Alloy~~

(portions of table not shown remain unchanged)

SUBSTANTIATION:

Table 307.1 is being updated to correlate with the most recent edition of the Uniform Plumbing Code (UPC) which provides a similar table in Chapter 6 (Water Supply and Distribution). Since the addition of Table 307.1 into the USPSHTC, there have been other standards added to the same table in the UPC. For correlation between the two codes and to prevent conflicts, the above additional standards are necessary for inclusion.

The newly added standards are applicable to Table 307.1 as depicted below.

ASME B16.50 establishes requirements for wrought copper and wrought copper alloy braze-joint seamless fittings and covers pressure-temperature ratings, sizing, markings, material and testing.

ASSE 1061 establishes minimum performance requirements for push-fit fittings and push-fit connections that are integrated into plumbing devices.

ASTM A554 covers welded austenitic, ferritic, and austenitic-ferritic duplex stainless steel mechanical tubing intended for use in applications where appearance, mechanical properties, or corrosion resistance is needed.

ASTM A778 covers straight seam and spiral butt seam welded unannealed austenitic stainless steel tubular products intended for low and moderate temperatures and corrosive service where heat treatment is not necessary for corrosion resistance.

ASTM B43 establishes requirements for seamless copper alloy and covers workmanship, performance, testing and markings.

ASTM B135 covers seamless round and rectangular copper alloy tube in straight lengths. Ten alloys are included in the standard and listed with acceptable compositions. Also covered are general requirements, workmanship, testing, and mechanical properties.

ASTM D3261 covers polyethylene butt fusion fittings for use with polyethylene pipe and tubing. This standard includes requirements for materials, workmanship, dimensions, marking, sustained pressure, and burst pressure.

ASTM F1055 covers electrofusion polyethylene fittings for use with outside diameter-controlled polyethylene pipe and crosslinked polyethylene. Requirements for materials, workmanship, testing, performance, markings, and quality assurance are included.

ASTM F3226 establishes the performance characteristics required for metallic press-connect fittings for use in piping and tubing systems with a maximum allowable working pressure of 300 psi. These fittings directly attach to pipe or tube by mechanical deformation of the pipe or tube or fitting, or a combination thereof, creating a seal and a restrained joint.

AWWA C907 addresses polyvinyl chloride injection-molded fittings with push-on rubber-gasketed joints for use in water applications. The standard covers requirements for permeation, materials, and pressure class. Also included are specifications for testing, markings, and application.

CSA B137.18 specifies requirements for polyethylene of raised temperature tubing systems that are comprised of tubing and fittings. This standard specifies materials, workmanship, interior liners, hydrostatic capability, and markings.

IAPMO PS 117 covers press connections made with the following:

- copper or copper alloy fittings and Type K, L, and M copper tube;
- carbon steel fittings and Schedule 10 and 40 carbon steel pipe;
- stainless steel fittings and Schedule 5, 10, and 40 stainless steel pipe; or
- stainless steel fittings and stainless steel pipe.



CODES ADMINISTRATION

Proposals

Item #: 013

USPSHTC 2021 Section: 307.8.1, Table 1001.1

SUBMITTER: Christopher Jensen
UL LLC

RECOMMENDATION:
Revise text

307.0 Water Supply and Circulating System Pipe and Fitting Materials.

307.8 Plastic Materials. (remaining text unchanged)

307.8.1 Tracer Wire. Plastic materials for water service piping outside underground shall have a blue insulated copper tracer wire, or other approved conductor installed adjacent to the piping. Access shall be provided to the tracer wire, or the tracer wire shall terminate aboveground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG, and the insulation type shall be approved for direct burial.

Exception: Tracer wire utilizing copper-clad steel conductors listed and labeled in accordance with UL 2989 shall be permitted.

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
<u>UL 2989-2016</u>	<u>Outline of Investigation for Tracer Wire</u>	<u>Miscellaneous</u>	<u>307.8.1</u>

(portions of table not shown remain unchanged)

Note: UL 2989 does not meet the requirements for a consensus reference standard in accordance with Section 15.2 of IAPMO's Regulations Governing Consensus Development of the Uniform Solar, Hydronics & Geothermal and Swimming Pool, Spa & Hot Tub Codes.

SUBSTANTIATION:

Tracer wire that is listed and labeled in accordance with UL 2989 has undergone specific testing to determine its suitability for use underground as a tracer wire. The tests include:

- Physical Properties of Insulation
- Mechanical Water Absorption
- Cold-Bend Test
- Crushing Resistance
- Impact Resistance
- Unwinding at Low Temperature
- Dielectric-Voltage Withstand

The new exception will assist the AHJ in making a determination as to an approved alternate tracer wire to an insulated copper wire identified for direct burial. UL currently has 15 manufacturers that have tracer wire listed to UL 2989.

COMMITTEE ACTION: ACCEPT AS SUBMITTED

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC Section #: 307.8.1, Table 1001.1

Item #: 013

SUBMITTER: Lizette Guzman
Self

Comment #: 1

RECOMMENDATION:

Revise text

Request to accept the code change proposal **as modified** by this public comment.

307.0 Water Supply and Circulating System Pipe and Fitting Materials.

307.8 Plastic Materials. (remaining text unchanged)

307.8.1 Tracer Wire. Plastic materials for water service piping outside underground shall have a blue insulated copper tracer wire, or other approved conductor installed adjacent to the piping. Where tracer wires utilizing copper-clad steel conductors are installed, such tracer wires shall be in accordance with ASTM B1010 or UL 2989. Access shall be provided to the tracer wire, or the tracer wire shall terminate aboveground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG, and the insulation type shall be approved for direct burial.

~~Exception: Tracer wire utilizing copper-clad steel conductors listed and labeled in accordance with UL 2989 shall be permitted.~~

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
<u>ASTM B1010/B1010M-2019</u>	<u>Copper-Clad Steel Electrical Conductor for Tracer Wire Applications</u>	<u>Miscellaneous</u>	<u>307.8.1</u>

(portions of table not shown remain unchanged)

Note: ASTM B1010/B1010M meets the requirements for a mandatory reference standard in accordance with Section 15.0 of IAPMO's Regulations Governing Consensus Development of the Uniform Solar, Hydronics & Geothermal and Swimming Pool, Spa & Hot Tub Codes.

SUBSTANTIATION:

Section 307.8.1 is being revised for clarity as well as for the inclusion of ASTM B1010. The current organization of the section seems unclear since the section already states that "other approved conductor(s)" may be installed. This gives the Authority Having Jurisdiction the power to approve such tracer wires without the need for an exception. For this reason, the exception has been deleted and the UL standard has been moved to be in line with listed provisions.

ASTM B1010 is being added as it pertains to copper-clad steel conductors for tracer wire applications. This standard covers materials, manufacturing, physical properties, resistivity, workmanship, and testing. For these reasons, the standard should be included.

PUBLIC COMMENT 2

Code Year: 2021 USPSHTC Section #: 307.8.1

Item #: 013

SUBMITTER: Andrew Todd
V&T Carbonic Inc.

Comment #: 2

RECOMMENDATION:

Revise text

Request to accept the code change proposal **as modified** by this public comment.

307.0 Water Supply and Circulating System Pipe and Fitting Materials.

307.8 Plastic Materials. (remaining text unchanged)

307.8.1 Tracer Wire. Plastic materials for water service piping outside underground shall have a blue insulated copper tracer wire, or other approved conductor. Tracer wire or approved conductors shall be installed adjacent to the piping and secured in 10-foot (3048 mm) intervals. Tracer wire shall be securely bonded together at wire joints with an approved watertight connector. Access shall be provided to the tracer wire, or the tracer wire shall terminate aboveground at each end of the nonmetallic piping. The tracer wire size shall be not less than 18 AWG, and the insulation type shall be approved for direct burial.

Exception: Tracer wire utilizing copper-clad steel conductors listed and labeled in accordance with UL 2989 shall be permitted.

SUBSTANTIATION:

The above modifications are being included to address how tracer wires should be installed and secured. Anchoring or securing the tracer wire at 10 foot intervals ensures that the wire will correctly indicate the location of corresponding piping. Where tracer wires are joined, it is imperative that they are bonded and made watertight to ensure electrical continuity.



CODES ADMINISTRATION

Proposals

Item #: 014

USPSHTC 2021 Section: 308.6.1

SUBMITTER: Adam Segura
Self

RECOMMENDATION:
Revise text

308.0 Water Supply and Circulating System Pipe Joints and Connections.

308.6 PE Plastic Pipe/Tubing and Joints. (remaining text unchanged)

308.6.1 Heat-Fusion Joints. Heat-fusion joints between PE pipe or tubing and fittings shall be assembled in accordance with Section 308.6.1.1 through Section 308.6.1.3 using butt, socket, ~~and/or~~ electro-fusion heat methods.

SUBSTANTIATION:

The proposed change will clarify the intent of the section on heat-fusion joints. There are three types of heat fusion methods which include "butt, socket, and electro-fusion." This section should read "or" as only one method can be applied at a time. This change will remove confusion for the end user and the AHJ.

COMMITTEE ACTION: ACCEPT AS SUBMITTED

TOTAL ELIGIBLE TO VOTE: 10

VOTING RESULTS: AFFIRMATIVE: 9 NOT RETURNED: 1 Fruia

Appended Comments

PUBLIC COMMENT 1

Code Year: 2021 USPSHTC **Section #:** 308.0 - 308.16.1

Item #: 014

SUBMITTER: Arnold Rodio
Pace Setter Plumbing Corp.

Comment #: 1

RECOMMENDATION:
Revise text

Request to accept the code change proposal as modified by this public comment.

308.0 Water Supply and Circulating System Pipe Joints and Connections.

308.1 Copper or Copper Alloy Pipe, Tubing, and Joints. (remaining text unchanged)

308.1.1 Brazed Joints. Brazed joints between copper or copper alloy pipe or tubing and fittings shall be made with brazing alloys having a liquid temperature above 1000°F (538°C). The joint surfaces to be brazed shall be cleaned bright by either manual or mechanical means. Tubing shall be cut square and reamed to full inside diameter. Brazing flux shall be applied to the joint surfaces where required by manufacturer's recommendation. Brazing filler metal ~~in accordance with~~ shall conform to AWS A5.8 and shall be applied at the point where the pipe or tubing enters the socket of the fitting.

308.1.2 Flared Joints. Flared joints for soft copper or copper alloy water tubing shall be made with fittings that ~~are in~~ accordance with the applicable standards referenced in Table 307.1. Pipe or tubing shall be cut square using an

appropriate tubing cutter. The tubing shall be reamed to full inside diameter, resized to round, and expanded with a proper flaring tool.

308.1.3 Mechanical Joints. (remaining text unchanged)

308.1.3.2 Pressed Press-Connect Fittings. ~~Pressed~~~~Press-connect~~ fittings for copper or copper alloy pipe or tubing shall have an elastomeric o-ring that forms the joint. The pipe or tubing shall be fully inserted into the fitting, and the pipe or tubing marked at the shoulder of the fitting. Pipe or tubing shall be cut square, chamfered, and reamed to full inside diameter. The fitting alignment shall be checked against the mark on the pipe or tubing to ensure the pipe or tubing is inserted into the fitting. The joint shall be pressed using the tool recommended by the manufacturer.

308.1.3.3 Push Fit Fittings. Removable and nonremovable push fit fittings for copper or copper alloy tubing or pipe that employ quick assembly push fit connectors shall ~~be in accordance~~ comply with ASSE 1061. Push fit fittings for copper or copper alloy pipe or tubing shall have an approved elastomeric o-ring that forms the joint. Pipe or tubing shall be cut square, chamfered, and reamed to full inside diameter. The tubing shall be fully inserted into the fitting, and the tubing marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the tubing to ensure the tubing is inserted into the fitting and gripping mechanism has engaged on the pipe.

308.1.4 Soldered Joints. Soldered joints between copper or copper alloy pipe or tubing and fittings shall be made in accordance with ASTM B828 with the following sequence of joint preparation and operation as follows: measuring and cutting, reaming, cleaning, fluxing, assembly and support, heating, applying the solder, cooling and cleaning. Pipe or tubing shall be cut square and reamed to the full inside diameter including the removal of burrs on the outside of the pipe or tubing. Surfaces to be joined shall be cleaned bright by manual or mechanical means. Flux shall be applied to pipe or tubing and fittings and shall ~~be in accordance with~~ conform to ASTM B813, and shall become noncorrosive and nontoxic after soldering. Insert pipe or tubing into the base of the fitting and remove excess flux. Pipe or tubing and fittings shall be supported to ensure a uniform capillary space around the joint. Heat shall be applied using an air or fuel torch with the flame perpendicular to the pipe or tubing using acetylene or an LP gas. Preheating shall depend on the size of the joint. The flame shall be moved to the fitting cup and alternate between the pipe or tubing and fitting. Solder ~~in accordance with~~ conforming to ASTM B32 shall be applied to the joint surfaces until capillary action draws the molten solder into the cup. Solder and fluxes with a lead content that exceeds 0.2 percent shall be prohibited in piping systems conveying potable water. Joint surfaces shall not be disturbed until cool and any remaining flux residue shall be cleaned.

308.1.5 Threaded Joints. Threaded joints for copper or copper alloy pipe shall be made with pipe threads ~~in accordance that~~ comply with ASME B1.20.1. Thread sealant tape or compound shall be applied only ~~to~~ on male threads, and such material shall be of approved types, insoluble in water, and nontoxic.

308.2 CPVC Plastic Pipe and Joints. (remaining text unchanged)

308.2.1 Mechanical Joints. Mechanical joints shall include compression, flanged, grooved and push fit fittings.

308.2.1.1 Push Fit Fittings. Removable and nonremovable push fit fittings that employ a quick assembly push fit connector shall ~~be in accordance~~ comply with ASSE 1061.

308.2.2 Solvent Cement Joints. Solvent cement joints for CPVC pipe and fittings shall be clean from dirt and moisture. Solvent cements ~~in accordance~~ shall comply with ASTM F493, requiring the use of a primer shall be orange in color. The primer shall be colored and ~~be in accordance~~ shall comply with ASTM F656. Listed solvent cement ~~in accordance that~~ complies with ASTM F493 and that does not require the use of primers, yellow or red in color, shall be permitted for pipe and fittings ~~manufactured in accordance that comply~~ with ASTM D2846, 1/2 of an inch (15 mm) through 2 inches (50 mm) in diameter or ASTM F442, 1/2 of an inch (15 mm) through 3 inches (80 mm) in diameter. Apply primer where required inside the fitting and to the depth of the fitting on pipe. Apply liberal coat of cement to the outside surface of pipe to depth of fitting and inside of fitting. Place pipe inside fitting to forcefully bottom the pipe in the socket and hold together until joint is set.

308.3 CPVC/AL/CPVC Plastic Pipe and Joints. Chlorinated polyvinyl chloride/aluminum/chlorinated polyvinyl chloride (CPVC/AL/CPVC) plastic pipe and fitting joining methods shall be installed in accordance with the manufacturer's installation instructions and shall comply with Section 308.3.1 or Section 308.3.2.

308.3.1 Solvent Cement Joints. Solvent cement joints for CPVC/AL/CPVC pipe and fittings shall be clean from dirt and moisture. Solvent cements ~~in accordance that comply~~ with ASTM F493, requiring the use of a primer shall be orange in color. The primer shall be colored and ~~be in accordance~~ shall comply with ASTM F656. Listed solvent cement ~~in accordance that~~ complies with ASTM F493 and that does not require the use of primers, yellow in color, shall be permitted to join pipe ~~manufactured in accordance that comply~~ with ASTM F2855 and fittings ~~manufactured in accordance that comply~~ with ASTM D2846, 1/2 of an inch (15 mm) through 2 inches (50 mm) in diameter. Apply primer where required inside the fitting and to the depth of the fitting on pipe. Apply liberal coat of cement to the outside surface of pipe to depth of fitting and inside of fitting. Place pipe inside fitting to forcefully bottom the pipe in the socket and hold together until joint is set.

308.3.2 Mechanical Joints. Mechanical joints shall include flanged, grooved, and push fit fittings.



Documents

Document Sharing Hub

308.3.2.1 Push Fit Fittings. ~~Removable and nonremovable push fit fittings that employ a quick assembly push fit connector shall comply with ASSE 1061.~~

308.5 Galvanized Steel Pipe and Joints. (remaining text unchanged)

308.5.2 Threaded Joints. Threaded joints shall be made with pipe threads that ~~are in accordance with~~ ASME B1.20.1. Thread sealant tape or compound shall be applied only ~~to on~~ male threads, and such material shall be of approved types, insoluble in water, and nontoxic.

308.6 PE Plastic Pipe/Tubing and Joints. (remaining text unchanged)

308.6.1 Heat-Fusion Joints. (remaining text unchanged)

308.6.1.1 Butt-Fusion Joints. Butt-fusion joints shall be ~~installed made~~ in accordance with ASTM F2620. ~~Joints and~~ shall be made by heating the squared ends of two pipes, pipe and fitting, or two fittings by holding ends against a heated element. The heated element shall be removed where the proper melt is obtained and joined ends shall be placed together with applied force.

308.6.1.3 Socket-Fusion Joints. Socket-fusion joints shall be ~~installed made~~ in accordance with ASTM F2620. ~~Joints and~~ shall be made by simultaneously heating the outside surface of a pipe end and the inside of a fitting socket. Where the proper melt is obtained, the pipe and fitting shall be joined by inserting one into the other with applied force. The joint shall fuse together and remain undisturbed until cool.

308.6.2 Mechanical Joints. Mechanical joints between PE pipe or tubing and fittings shall include insert and mechanical compression fittings that provide a pressure seal resistance to pullout. Joints for insert fittings shall be made by cutting the pipe square, using a cutter designed for plastic piping, and removal of sharp edges. Two stainless steel clamps shall be placed over the end of the pipe. Fittings shall be checked for proper size based on the diameter of the pipe. The end of pipe shall be placed over the barbed insert fitting, making contact with the fitting shoulder. Clamps shall be positioned equal to 180 degrees (3.14 rad) apart and shall be tightened to provide a leak tight joint. Compression type couplings and fittings shall be permitted for use in joining PE piping and tubing. Stiffeners that extend beyond the clamp or nut shall be prohibited. Bends shall be not less than 30 pipe diameters, or the coil radius where bending with the coil. Bends shall not be permitted closer than 10 pipe diameters of ~~any~~ fitting or valve. Mechanical joints shall be designed for their intended use.

308.7 PE-AL-PE Plastic Pipe/Tubing and Joints. (remaining text unchanged)

308.7.1 Mechanical Joints. (remaining text unchanged)

308.7.1.1 Compression Joints. Compression joints for PE-AL-PE pipe or tubing and fittings shall be joined through the compression of a split ring, by a compression nut around the circumference of the pipe. The compression nut and split ring shall be placed around the pipe. The ribbed end of the fitting shall be inserted ~~onto into~~ the pipe until the pipe contacts the shoulder of the fitting. Position and compress the split ring by tightening the compression nut onto the insert fitting.

308.8 PE-RT. Polyethylene of raised temperature (PE-RT) tubing ~~and fitting joining methods~~ shall ~~be marked comply with~~ Section 308.8.1.

308.8.1 Mechanical Joints. ~~Fittings for PE-RT tubing shall comply with the appropriate standard designation(s) applicable standards listed in Table 307.1. Mechanical joints for which the tubing has been approved.~~ PE-RT tubing shall be installed in accordance with the manufacturer's installation instructions.

~~**308.8.1 Fittings.** Metal insert fittings, metal compression fittings, and plastic fittings shall be manufactured to and marked in accordance with the standards for fittings in Table 307.1.~~

308.9 PEX Plastic Tubing and Joints. PEX plastic tubing and fitting joining methods shall be installed in accordance with the manufacturer's installation instructions and shall comply with Section 308.9.1 ~~and through~~ Section 308.9.2.

308.9.1 Fittings. Fittings for PEX tubing shall comply with the applicable standards referenced in Table 307.1. PEX tubing ~~in accordance that complies~~ with ASTM F876 shall be marked with the applicable standard designation for the fittings, specified by the tubing manufacturer for use with the tubing.

308.10 PEX-AL-PEX Plastic Tubing and Joints. (remaining text unchanged)

308.10.1 Mechanical Joints. Mechanical joints between PEX-AL-PEX tubing and fittings shall include mechanical and compression type fittings and insert fittings with a crimping ring. Insert fittings utilizing a crimping ring shall ~~be in accordance comply~~ with ASTM F1974 or ASTM F2434. Crimp joints for crimp insert fittings shall be joined to PEX-AL-PEX pipe by the compression of a crimp ring around the outer circumference of the pipe, forcing the pipe material into annular spaces formed by ribs on the fitting.

308.11 Polypropylene (PP) Piping and Joints. (remaining text unchanged)

308.11.3 Threaded Joints. PP pipe shall not be threaded. PP transition fittings for connection to other piping materials shall only be threaded by use of copper alloy or stainless steel inserts molded ~~into in~~ the fitting.