

2026

IAPMO HEADQUARTERS | ONTARIO, CALIFORNIA | MAY 11

USPSHTC[®] TECHNICAL COMMITTEE MEETING MONOGRAPH



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Public Comments
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AGENDA

**2026 Uniform Swimming Pool, Spa and Hot Tub Code
Technical Committee Meeting (Virtual Webinar)
IAPMO World Headquarters, Ontario, CA
Monday, May 11, 2026**

- 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 (Via teleconference on June 17, 2025)
- VII. Report of the USPSHTC Code Change Review Task Group (Chair)
- VIII. Discussion on Public Comments to the Uniform Swimming Pool, Spa & Hot Tub Code
- IX. Other Business
- X. Future Meetings
- XI. Adjournment



IAPMO Group Event Code of Conduct

The IAPMO Group, together with their respective subsidiaries and affiliates (collectively IAPMO) hold events to encourage the open exchange of ideas and to support professional development and personal growth. IAPMO believes that ensuring a wide, diverse range of voices that fully represent the diversity of the people it serves is essential to a thoughtful, robust conversation and better decision-making and policy-setting.

IAPMO is committed to creating and maintaining an engaging and productive conference, meeting, education session, and event environment in which all individuals are treated with respect and dignity. One that is welcoming and free from any form of harassment or other discrimination regardless of gender, gender identity and expression, age, sexual orientation, alienage or citizenship status, physical or mental ability, color, physical appearance, body size, race, ethnicity, national origin, marital status or partnership status, pregnancy or lactation status, religion or creed, status as a veteran or active military service member or any other basis protected by U.S. federal, state, or local laws.

This Conference, Meeting and Event Code of Conduct (“Event Code of Conduct”) guides everyone who participates in or attends IAPMO conferences, meetings, education sessions or other sponsored events (“Events”), including members, non-members, employees, speakers, students, sponsors, vendors, contractors, volunteers, and other guests (“Attendees”).

IAPMO wants to ensure that all Attendees understand what behavior is expected and what behavior will not be tolerated at an IAPMO Event. The facilities covered by this Event Code of Conduct include any venue, hotel, meeting room, or IAPMO office location where an IAPMO Event takes place, as well as off-site locations where Event-related social gatherings take place.

I. Expected Conduct

Attendees shall:

- a. Be mindful of your surroundings and of your fellow participants;
- b. Be considerate and respectful to each other;
- c. Exercise consideration in your speech and actions;
- d. Refrain from harassing, discriminatory or demeaning conduct;
- e. Alert IAPMO’s Chief Administrative Officer or Legal Department if they observe any conduct that violates this Event Code of Conduct;
- f. Comply with all rules, policies, and procedures of the facilities at which any Event is being held; and
- g. Comply with all applicable laws and regulations in the state where the Event is being held.

II. Unacceptable Behavior

Harassment, bullying, microaggressions, intimidation, and/or insinuations that are hurtful or interfere with any other attendee’s experience or participation are unacceptable behaviors. Examples of unacceptable behavior include but are not limited to the following:

- a. Demeaning, discriminatory, or harassing behavior or speech, including but not limited to personal insults, sexist, racist, homophobic, transphobic, ageist or ableist language or any language that insults or demeans the characteristics of a person protected under U.S. federal, state, or local law.



- b. Inappropriate physical contact: An Attendee should have another Attendee's consent before touching them.
- c. Alternative language: Unwelcome and uninvited attention or contact with another attendee/ participant.
- d. Language that implies exclusion or derogation of a person based on the person's immutable characteristic; for example, asking a participant where they are "really from"; assuming a person's spouse or partner is of the opposite gender; deliberately using the wrong pronoun to refer to an individual.
- e. Unwelcome sexual attention, including sexualized comments or jokes, inappropriate touching, groping, or sexual advances.
- f. Deliberate intimidation, stalking or following.
- g. Sustained disruption, including during talks and presentations.
- h. Displaying sexually explicit or violent material including in presented materials (e.g. slides, presentations, talks) or in informal settings or on personal devices (e.g. on a phone).
- i. Violence, threats of violence, or violent language directed against another person or group.
- j. Possession of dangerous or unauthorized materials such as explosives, firearms, weapons or similar items.
- k. Bullying, including repeated verbal abuse; verbal, non-verbal or physical conduct of a threatening, intimidating, or humiliating nature; or the sabotage or undermining of a person's performance.
- l. Theft or inappropriate removal or possession of property.
- m. Use, distribution, sale, or transfer of illegal drugs.
- n. Any other illegal activity or forms of harassment not covered above.

IAPMO reserves the right in its sole discretion to determine what constitutes unacceptable behavior and what actions it will take to address incidents that occur.

Consequences of Unacceptable Behavior

Unacceptable behavior will not be tolerated at IAPMO-sponsored events. Anyone asked by an IAPMO staff member or affiliate to stop engaging in unacceptable behavior is expected to comply immediately. If a participant engages in unacceptable behavior or fails to comply with expected behavior at any time during the sponsored event, IAPMO may take any action it deems appropriate, including but not limited to removing the participant from the event without a refund.

What to do About Unacceptable Behavior

If an Attendee witnesses or is subjected to unacceptable behavior or has any other concerns at an IAPMO-sponsored event, notify IAPMO's Chief Administrative Officer (Gaby.Davis@iapmo.org) or the Legal Department as soon as possible. All reported concerns will be treated seriously and investigated promptly. All Attendees are expected to cooperate fully and honestly with any investigation. If there are any questions in advance of the event regarding the Code of Conduct or its implementation, please email Gaby.Davis@iapmo.org.

Agreement

In line with and in consideration for my participation in an IAPMO-sponsored event, I accept and will adhere to the Code of Conduct when participating in such an event. I understand that IAPMO may take any action it deems appropriate, including removing me from the event without a refund, should I fail to adhere to this Code of Conduct.

TENTATIVE ORDER OF DISCUSSION

2026 PROPOSED PUBLIC COMMENTS TO THE UNIFORM SWIMMING POOL, SPA & HOT TUB CODE

The following is the tentative order of discussion in 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.

Item # 004	Item # 100
Item # 006	Item # 102
Item # 081	Item # 104
Item # 008	Item # 105
Item # 009	Item # 106
Item # 010	Item # 107
Item # 011	Item # 109
Item # 012	
Item # 014	
Item # 016	
Item # 020	
Item # 021	
Item # 027	
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Item # 041	
Item # 066	
Item # 074	
Item # 085	
Item # 092	
Item # 094	
Item # 098	
Item # 103	
Item # 096	
Item # 097	
Item # 099	



TECHNICAL COMMITTEE MEETING ACTIONS

2026 PROPOSED PUBLIC COMMENTS TO THE UNIFORM SWIMMING POOL, SPA, & HOT TUB CODE (USPSHTC)

The following is a list of items to be discussed during the Technical Committee meeting:

Item #	Public Comment	Committee Action	Notes:
Item #004	1		
Item #006	1		
Item #008	1		
Item #009	1		
Item #010	1		
Item #011	1		
Item #012	1		
Item #014	1		
Item #016	1		
Item #020	1		
Item #021	1		
	2		
	3		
Item #027	1		
Item #029	1		
Item #030	1		
Item #032	1		
	2		
	3		
Item #035	1		
	2		
Item #037	1		
Item #038	1		
Item #040	1		
Item #041	1		
Item #066	1		
	2		
	3		
	4		
	5		
	6		

Item #074	1		
Item #081	1		
	2		
Item #085	1		
	2		
	3		
Item #092	1		
Item #094	1		
Item #096	1		
	2		
Item #097	1		
Item #098	1		
	2		
Item #099	1		
Item #100	1		
Item #102	1		
Item #103	1		
	2		
Item #104	1		
	2		
	3		
Item #105	1		
Item #106	1		
Item #107	1		
Item #109	1		

Technical Committee Actions:

- REJECT
- ACCEPT AS AMENDED
- ACCEPT AS SUBMITTED

Uniform Swimming Pool,
Spa & Hot Tub Code
Public Comments

Item #:

004

Code Number:

2024 USPSHTC

Section Number:

206.0, 221.0

SUBMITTER:

Mark Hamilton

Organization Name:

Self

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

206.0 - D -

Disinfectant. A sanitizer or chemical agent used in the process of disinfection.

221.0 - S - Sanitizer. A chemical agent used in the process of sanitation.

SUBSTANTIATION:

This proposal aims to clarify the difference between "disinfectants" and "sanitizers." Disinfectants neutralize or destroy pathogens during the process of disinfection, while sanitizers reduce the number of pathogens to safe levels in the process of sanitation. Clarifying this distinction is necessary since the code addresses primary, secondary and supplemental treatment which require the use of disinfectants and disinfection systems. Since there are current code requirements pertaining to sanitation of surfaces, defining both is beneficial for the end user.

Committee Action:

Reject

Committee Statement:

The revisions to the definition for "disinfection" and the proposed new definition for "sanitizer" are technically inaccurate and unintentionally limiting. For example, ultraviolet lamps and ozone are not chemical agents but are considered a type of "sanitizer."

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

004

Code Number:

2024 USPSHTC

Sections(s):

206.0, 221.0

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

Proposed Text:Request to replace the code change proposal by this public comment.**206.0 -D-**

Disinfectant. A sanitizer or chemical used in the process of disinfection. Typically used as a treatment that kills or irreversibly inactivates microorganisms.

221.0 - S -

Sanitizer. Is used to reduce the level of microbes by killing bacteria, viruses, and algae to keep pool water safe and clear.

Substantiation:

The definitions are being updated to clearly distinguish between the functions of disinfectants and sanitizers as used in the USPCSHTC. These terms are often misunderstood or used interchangeably, despite having different regulatory and operational purposes.

A disinfectant is intended to kill or irreversibly inactivate pathogenic microorganisms such as bacteria, viruses, and protozoa. In contrast, a sanitizer reduces microbial levels to safer concentrations but may not reliably inactivate all pathogens of concern.

Clarifying these definitions improves technical accuracy, supports consistent application of code requirements, and assists end users, operators, and regulators in selecting the appropriate treatment method for maintaining safe and healthy water conditions.

Item #:

006

Code Number:

2024 USPSHTC

Section Number:

217.0

SUBMITTER:

Mark Hamilton

Organization Name:

Self

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

217.0 - O -

Oxidation Reduction Potential (ORP). A standard method of measuring a disinfectant's ability to oxidize and sanitize water. It is a qualitative measure of sanitizer oxidizer effectiveness. A parameter representing the balance between oxidizing agents and reducing agents in a solution. In water treatment systems, this parameter indicates the disinfectant's ability to oxidize contaminants and pathogens, thereby killing or neutralizing them. A high ORP value indicates effective disinfection. ORP takes into consideration all water constituents, including pH, TDS, cyanurates, and organic contaminants. It is a true, qualitative measure of water cleanliness. ORP is sometimes referred to as Redox.

SUBSTANTIATION:

The existing definition for ORP states that is a measure of "a disinfectant's ability to oxidize and sanitize water." First, disinfectants do not sanitize, they disinfect. Second, ORP indicates the tendency of a solution to accept or donate electrons in redox reactions. Thereby, representing the disinfectant's ability or effectiveness in killing or neutralizing contaminants and pathogens.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

006

Code Number:

2024 USPSHTC

Sections(s):

217.0

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

217.0 – 0 –

217.0 Oxidation Reduction Potential (ORP). A parameter representing the balance between oxidizing agents and reducing agents in a solution. In water treatment systems, this parameter indicates the disinfectant’s ability to oxidize contaminants and pathogens, thereby killing or neutralizing them. A high ORP value indicates effective disinfection. ORP ~~takes into consideration~~ **is influenced by all constituents in water constituents**, including pH, **total dissolved solids (TDS)**, cyanurates, and organic contaminants. It ~~is a true~~ **provides a reliable**, qualitative measure of **overall** water cleanliness **and oxidizing potential**. ORP is sometimes referred to as Redox.

Substantiation:

The updated definition for Oxidation Reduction Potential (ORP) improves clarity by more accurately describing ORP as the balance between oxidizing and reducing agents and how this balance reflects the water’s ability to neutralize contaminants. This wording better communicates the operational purpose of ORP in aquatic facilities—namely, that higher ORP values correlate with stronger disinfecting conditions and more effective pathogen inactivation.

The revision also explains that ORP is influenced by multiple water constituents, including pH, TDS, cyanuric acid, and organic material. Identifying these factors helps users understand why ORP values may vary even when disinfectant levels appear adequate. The updated language provides a clearer, more practical description of ORP as a qualitative indicator of overall water cleanliness while retaining the familiar terminology “Redox” to support consistent usage across the industry.

Item #:
008

Code Number:
2024 USPSHTC

Section Number:
221.0

SUBMITTER:
Kenneth Gregory

Organization Name:
USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair

Organization Representation:

RECOMMENDATION:
Revise text

Proposed Text :

221.0 - S -

Swimout. An underwater seating, ~~or~~ wading area, teaching ledge, or deep water stairwell that is located completely outside of the diving, current, or wave action area of the pool.

SUBSTANTIATION:

The definition for swimouts is being updated to clarify that teaching ledges fall under the umbrella of swimouts. These are common features for swimming schools and will clarify their use and classification. Additionally, deep water stairwells is also a common term that falls under the same category and are being added for clarity and intent where swimouts are used in the code.

Committee Action:

Accept As Submitted

Committee Statement:

A comma is being editorially added after the term "seating" to correct punctuation.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

8

NEGATIVE:

3

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

Case: The teaching ledge reference should be removed. The use of swim outs in teaching is not uniform enough across the instructional industry to warrant its inclusion in this definition.

Prystupa: An underwater swimout seat is higher to the surface than a teaching ledge, which is normally approximately 36 inches below the surface. They should be separately defined.

Roberts: I agree with the comments by Dewey Case and Curtis Prystupa.

Comment 1

Item #:

008

Code Number:

2024 USPSHTC

Sections(s):

221.0

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

221.0 -S-

Swimout. An underwater seating, wading area, teaching ledge, or deep water stairwell that is located completely outside of the main body of the ~~diving, current, or wave action area of the~~ pool.

Substantiation:

The phrase "diving, current, or wave action area of the" is being removed because it does not accurately reflect the intended placement of a swimout. Swimouts are required to be located outside of the main body of the pool, which is a clearer and more technically appropriate description. The updated language eliminates ambiguity and ensures consistency with how swimout locations are evaluated across different pool types and operational conditions.

Item #:

009

Code Number:

2024 USPSHTC

Section Number:

223.0

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Revise text

Proposed Text :

223.0 - U -

Ultraviolet Light. The light that is located on the electro-magnetic spectrum between visible light and X-rays.Ultraviolet light is ~~emitted by the sun or~~ created artificially by a **UV lamp** light bulb and is used in pool, spa, or hot tub water as a disinfectant to inactivate pathogenic organisms and destroy chloramines. ~~Also used as a method of producing ozone.~~**SUBSTANTIATION:**

This definition may be misinterpreted to indicate that ozone is always produced, which is not the case. Text is being stricken as it causes confusion for people that are not well versed in UV generated ozone. The remainder portions of the definition define UV light correctly without adding unnecessary verbiage. Additionally, the reference to the sun is misleading and also being stricken since the UV light being defined here is from a lamp.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

009

Code Number:

2024 USPSHTC

Sections(s):

223.0

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

223.0 -U-

Ultraviolet Light. The light that is located on the electro-magnetic spectrum between visible light and X-rays. Ultraviolet light is created artificially by a UV lamp and is used in pool, spa, or hot tub water as a disinfectant to inactivate pathogenic **micro**organisms and destroy chloramines.

Substantiation:

The term “organism” is being updated to “microorganism” to provide greater technical accuracy and align the definition with established scientific and industry terminology. Ultraviolet (UV) disinfection targets microorganisms, including bacteria, viruses, protozoa, algae, and fungi. Most of which are microscopic and cannot be seen with the naked eye. Using the more precise term “microorganism” clarifies the scope of UV effectiveness and avoids misinterpretation that UV systems may act on larger organisms or non-microbial contaminants. This correction improves clarity for end users, regulators, and designers and harmonizes the definition with terminology used across the code and related standards.

Item #:

010

Code Number:

2024 USPSHTC

Section Number:

303.9

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Add new text

Proposed Text :

303.0 Workmanship and Installation Practices.

303.9 Empty Inground Aquatic Venue. An approved barrier shall be required where an aquatic venue deeper than 18 inches (457 mm) is empty of water.

SUBSTANTIATION:

A common fall hazard is 18 inches (457 mm). There are reports of many accidents where people fall into empty pools. This minimum requirement is a safety concern. The fencing and/or barrier requirements will prevent mishaps from occurring in such locations.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

5

NEGATIVE:

6

ABSTAIN:

0

NOT RETURNED:

0

Failed Ballot Disclaimer:

Note: Item # 010 failed to achieve the necessary two-thirds affirmative vote of returned ballots. In accordance with Section 6.8.2 of the Regulations Governing Consensus Development of the USHGC and USPSHTC, a public comment is requested for this proposal. The Technical Committee will reconsider this proposal as a public comment.

EXPLANATION OF NEGATIVE:

CASE: I agree with the comments by Curtis Prystupa.

LACO: I agree with the comments by Curtis Prystupa.

PRYSTUPA: The pool area should have a permanent perimeter barrier that can be locked. Attaching a supplemental barrier around the body of the pool would be difficult to fabricate and impractical for the personnel working on the pool.

ROBERTS: I agree with the comments by Curtis Prystupa.

RODIO: I agree with the comments by Curtis Prystupa.

WAY: I agree with the comments by Curtis Prystupa.

Comment 1

Item #:

010

Code Number:

2024 USPSHTC

Sections(s):

303.9

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

303.0 Workmanship and Installation Practices.

303.9 Empty Inground Aquatic Venue. While an inground aquatic venue is emptied for any duration of time, a barrier and a posted caution sign shall be required.

(renumber remaining sections)

Substantiation:

The updated text removes the previously specified depth of 18 inches, which was overly narrow and created ambiguity regarding when safety measures should apply. Any inground aquatic venue that is emptied, regardless of depth, creates a fall hazard and presents significant safety concerns for workers, patrons, and the general public.

By requiring a barrier and a posted caution sign whenever an inground aquatic venue is empty, the updated language provides clearer direction, improves enforceability, and ensures consistent protection across all venue types. This change aligns the requirement with the actual safety risks associated with empty pools rather than tying it to a single depth threshold that may not adequately reflect those risks.

Item #:

011

Code Number:

2024 USPSHTC

Section Number:

303.9

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Add new text

Proposed Text :

303.0 Workmanship and Installation Practices.

303.9 Abandoned Aquatic Facilities. Venues that are no longer in operation and no longer maintained to minimum water quality and clarity standards shall be considered abandoned. Abandoned venues shall be drained and contain permanent barriers to prevent entry.

Exceptions:(1) Venues winterized in an approved manner.(2) Venues seasonally closed in an approved manner.**SUBSTANTIATION:**

There are important steps to take when winterizing a pool in freezing weather and closing down for the season. However, provisions for abandoned facilities is usually not thought about. Such facilities that are known to be abandoned should be closed down in a manner to protect the public and to prevent any mishaps from occurring. The added text highlights this concern and requires that these abandoned places are kept safe from preventing entry and removing any stagnant water to avoid disease.

Committee Action:

Accept As Amended by the TC

Proposed Text :

303.0 Workmanship and Installation Practices.

303.9 Abandoned Aquatic Facilities. Venues that are no longer in operation and no longer maintained to minimum water quality and clarity standards shall be considered abandoned. Abandoned venues shall be drained, filled in, and contain permanent barriers to prevent entry.

Exceptions:(1) Venues winterized in an approved manner with approved safety covers in accordance with Section 806.1.

(2) Venues seasonally closed in an approved manner.

Committee Statement:

Section 303.9 (Abandoned Aquatic Facilities) is being amended to reference existing Section 806.1 (General), which requires safety covers to be listed to ASTM F1346. Additionally, language is being added to allow abandoned venues to be filled in. Both updates are intended to prevent the accumulation of water in abandoned pools and to promote health and safety.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

011

Code Number:

2024 USPSHTC

Sections(s):

303.9

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

303.0 Workmanship and Installation Practices.

303.9 Abandoned Aquatic Facilities. Venues that are no longer in operation and no longer maintained to minimum water quality and clarity standards shall be considered abandoned. Abandoned venues shall be drained; and filled in, and. Where an abandoned aquatic facility is not filled in, it shall contain permanent barriers to prevent entry.

Exceptions:

- (1) Venues winterized in an approved manner with approved safety covers in accordance with Section 806.1.
- (2) Venues seasonally closed in an approved manner.

Substantiation:

This modification corrects an oversight. As written, the section will require a barrier even if a facility is filled in.

The revisions clarifies when permanent barriers are required for abandoned aquatic facilities. When an abandoned venue is drained and filled in, the original fall and drowning hazards are eliminated, and a permanent barrier is no longer necessary.

The revised language maintains the life safety intent of the section by requiring permanent barriers only when an abandoned facility is not filled in, ensuring protection from unintended access while avoiding unnecessary and unenforceable requirements. This clarification improves enforceability, eliminates conflicting obligations, and accurately reflects the original intent of the proposal.

Item #:

012

Code Number:

2024 USPSHTC

Section Number:

303.9 - 303.9.2, Table 1001.1

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Add new text

Proposed Text :

303.0 Workmanship and Installation Practices.

303.9 Raised Pool Edges. Pool outside entry heights shall meet the stair and slip resistance requirement.303.9.1 Raised Pool Perimeter Deck. The outer deck surface shall slope away from the pool, spa, or hot tub, including the perimeter overflow channel or any portion of the recirculation system towards an approved drain.303.9.2 Gutters and Grates. Gutters and grates shall meet the minimum load classification requirement by the building code or ASME A112.21.1M. Gutters and grates shall be slip resistant in accordance with the applicable recognized standard. Gutter and grate openings shall meet the child finger and toe entrapment standard. Gutters, grates, and covers shall be securely placed in accordance with the manufacturer's instructions and building code.

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
<u>ASME A112.21.1M-1991</u>	<u>Floor Drains</u>	<u>Floor Drains</u>	<u>303.9.2</u>

(portions of table not shown remain unchanged)

Note: ASME A112.21.1M 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:

The new provisions are adding requirements for raised pool edges which surround an inground pool. The text provides minimum safety requirements related to slip resistance and deck drainage. Additionally, the section related to gutters and grates is intended to prevent the installation of materials that are not rated for the loads and conditions where they are being placed. There are gutters and grates that have cracked, broken, or shifted because of bad installations and because of improper materials being used. This is a safety concern and intended to provide minimum requirements for the safety of the public.

Committee Action:

Accept As Amended by the TC

Proposed Text :

303.0 Workmanship and Installation Practices.

303.9 Raised Pool Edges. Pool outside entry heights shall meet the stair and slip resistance requirement.

303.9.1 Raised Pool Perimeter Deck. The outer deck surface shall slope away from the pool, spa, or hot tub, including the perimeter overflow channel or any portion of the recirculation system towards an approved drain.

303.9.2 Gutters and Grates. Gutters and grates shall meet the minimum load classification requirement by the building code, NSF/ANSI/CAN 50, or ASME A112.21.1M. Gutters and grates shall be slip resistant in accordance with the applicable recognized standard. Gutter and grate openings shall meet the child finger and toe entrapment standard. Gutters, grates, and covers shall be securely placed in accordance with the manufacturer’s instructions and building code.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME A112.21.1M-1991	Floor Drains	Floor Drains	303.9.2

(portions of table not shown remain unchanged)

Committee Statement:

Item #012 is being amended to include reference to NSF/ANSI/CAN 50 to address anticipated loads. However, concerns remain regarding injuries associated with the use of gutter grates as a means of egress from certain pools designed for social interaction. In such cases, grates have been reported to break, and specific listings are needed to address spacing, entrapment, and slip resistance. The committee requests that additional revisions be submitted via public comment to address these concerns.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

012

Code Number:

2024 USPSHTC

Sections(s):

303.10.2, Table 1001.1

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

303.0 Workmanship and Installation Practices.

303.10 Raised Pool Edges. (remaining text unchanged)

303.10.2 Gutters and Grates. Gutters and grates shall meet the minimum load classification requirement by the building code, or NSF/ANSI/CAN 50 or ~~ASME A112.21.1M~~. Gutters and grates shall be slip resistant in accordance with the applicable recognized standard. Gutter and grate openings shall meet the child finger and toe entrapment standard. Gutters, grates, and covers shall be securely placed in accordance with the manufacturer’s instructions and building code.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME A112.21.1M 1991	Floor Drains	Floor Drains	303.9.2

(portion of table not shown remain unchanged)

Substantiation:

The referenced standard ASME A112.21.1M is being removed as it has been designated as discontinued by the promulgator.

Item #:

014

Code Number:

2024 USPSHTC

Section Number:

316.0, 316.1

SUBMITTER:

Alison Osinski

Organization Name:

Aquatic Consulting Services

Organization Representation:**RECOMMENDATION:**

Add new text

Proposed Text :**316.0 Evacuation and Closure Policy.**

316.1 General. Public aquatic facilities shall have written and rehearsed procedures for evacuation and closure as part of a lightning safety policy, for severe weather conditions, fire emergencies, chemical emergencies, earthquakes, or other natural disasters in accordance with the Authority Having Jurisdiction.

SUBSTANTIATION:

This requirement would apply to specific regions prone to lightning storms, severe weather conditions, fire emergencies, chemical emergencies, or earthquakes. Facilities typically have their own safety procedures in place, however, this will ensure that such evacuation and closure policies are not overlooked in times of emergency.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF AFFIRMATIVE:

PRYSTUPA: Although I agree with the need for an operator to have an evacuation plan, I do feel that this matter is for an operator, not a builder. This would be covered within the local jurisdiction's health or operating permit pertinent, to the local conditions that would warrant the need for an evacuation.

Comment 1**Item #:**

014

Code Number:

2024 USPSHTC

Sections(s):

316.1

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:**

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

316.0 Evacuation and Closure Policy.

316.1 General. Public aquatic facilities shall have written ~~and rehearsed~~ procedures for evacuation and closure as part of a lightning safety policy, for severe weather conditions, fire emergencies, chemical emergencies, earthquakes, or other natural disasters in accordance with the Authority Having Jurisdiction.

Substantiation:

The phrase “and rehearsed” is being removed because it is not enforceable by the Authority Having Jurisdiction. While written evacuation and closure procedures are necessary and appropriate, requiring facilities to rehearse these procedures cannot be consistently verified or inspected.

By retaining the requirement for written procedures, the section continues to ensure that facilities maintain clear emergency guidance for staff and patrons. The updated language reflects enforceable practice while still supporting preparedness through documented policies that inform users of the actions to take during emergencies.

Item #:

016

Code Number:

2024 USPSHTC

Section Number:

401.2.2

SUBMITTER:

Alison Osinski

Organization Name:

Aquatic Consulting Services

Organization Representation:**RECOMMENDATION:**

Add new text

Proposed Text :

401.0 General.

401.2 Lightning Protection Systems. (remaining text unchanged)

401.2.2 Lightning Detection Systems. Public aquatic facilities shall be connected to information, data, and alerts from lightning detection system(s)/network(s) such as NOAA, National Weather Service (NWS), or National Lightning Detection Network (NLDN).

SUBSTANTIATION:

Lightning detection systems tell you when an electrical storm is coming and that you need to evacuate. Also it will alert you when the time has passed and when it is safe to reopen the venues and facilities. It is a hazard to swim in a lightning storm and these alarms and detection systems will assist in preventing any incidents. There are many locations that require such system such as golf parks, and most water parks.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

9

NEGATIVE:

2

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

PRYSTUPA: This falls under the local operating permit for a public pool and does not mention methods of compliance. The language is too vague and lacks compliance clarity.

ROBERTS: The language is too vague to be enforceable or actionable. A review schedule or alert system should be identified for the facility.

Comment 1**Item #:**

016

Code Number:

2024 USPSHTC

Sections(s):

401.2.2

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

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

401.0 General.

401.2 Lightning Protection Systems. (remaining text unchanged)

401.2.2 Lightning Detection Systems. Public aquatic facilities shall be connected to information, data, and alerts from lightning detection system(s)/network(s) such as the National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), ~~or~~ National Lightning Detection Network (NLDN), or as required by the Authority Having Jurisdiction (AHJ).

Substantiation:

The update clarifies the meaning of the acronym NOAA by spelling out National Oceanic and Atmospheric Administration to improve readability and ensure users understand the referenced agency. The revision also adds reference to the Authority Having Jurisdiction (AHJ) to acknowledge that local jurisdictions may have their own lightning detection requirements, systems, or policies. This ensures flexibility for local adoption while maintaining a consistent baseline expectation for lightning detection system connectivity in public aquatic facilities.

Item #:
020

Code Number:
2024 USPSHTC

Section Number:
401.5

SUBMITTER:
Beth Hamil

Organization Name:
USPSHTC Private vs. Public Aquatic
Venue Types Task Group, Chair

Organization Representation:

RECOMMENDATION:

Revise text

Proposed Text :

401.0 General.

401.5 Bridges. Where bridges are installed over a pool or lazy river and intended for patrons to pass under, they shall have a vertical clearance of not less than 7 feet (2134 mm) from the bottom of the pool and have not less than a 4 foot (1219 mm) vertical clearance from the water surface to any structure or feature. Bridges shall have a width of not less than 48 inches (1219 mm) and shall be slip-resistant. Guardrails shall be installed on each side of a bridge and shall not be less than 42 inches (1067 mm) in height from the bridge surface. Balusters of guardrails shall be installed so as to prevent a 4 inch (102 mm) sphere to pass. Bridges or walkways that are not intended for a person to pass under shall be designed to prevent access or entrapment under the bridge.

SUBSTANTIATION:

Section 401.5 (Bridges) provides provisions related to minimum height dimensions below bridges. The existing provisions address access and capabilities to pass under the bridges. There is a concern related to bridges that are constructed as decorative features and not intended for people to be under or pass under. The additional text will bring this to light in an intent to prevent entrapment. As a general requirement under Section 401.0 (General), this section is intended to apply to both commercial and residential applications.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:
020

Code Number:
2024 USPSHTC

Section(s):
401.5

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

401.0 General.

401.5 Bridges. Where bridges are installed over a pool or lazy river and intended for patrons to pass under, they shall have a vertical clearance of not less than 7 feet (2134 mm) from the bottom of the pool and have not less than a 4 foot (1219 mm) vertical clearance from the water surface to any structure or feature. Bridges shall have a width of not less than 48 inches (1219 mm) and shall be slip-resistant. Guardrails shall be installed on each side of a bridge and shall not be less than 42 inches (1067 mm) in height from the bridge surface. Balusters of guardrails shall be installed so as to prevent a 4 inch (102 mm) sphere to pass. Bridges or walkways that are not intended for a person to pass under shall be designed to prevent access, or entrapment, **and entanglement** ~~under the bridge~~.

Substantiation:

The phrase “under the bridge” is being removed because it is unnecessarily specific and may not accurately reflect all potential design configurations. Some installations may present entrapment or access hazards in areas other than directly beneath the bridge structure. The revised wording maintains the intended safety requirement—preventing access, entrapment, and entanglement—while allowing the provision to apply broadly to a variety of designs.

Additionally, the inclusion of “entanglement” addresses an important safety concern and ensures the provision aligns with recognized hazard categories for aquatic environments.

Item #:

021

Code Number:

2024 USPSHTC

Section Number:

401.5.1

SUBMITTER:

Alison Osinski

Organization Name:

Aquatic Consulting Services

Organization Representation:**RECOMMENDATION:**

Add new text

Proposed Text :**401.0 General.**

(Section 401.5 shown for information purposes)

401.5 Bridges. Where bridges are installed over a pool or lazy river, they shall have a vertical clearance of not less than 7 feet (2134 mm) from the bottom of the pool and have not less than a 4 foot (1219 mm) vertical clearance from the water surface to any structure or feature. Bridges shall have a width of not less than 48 inches (1219 mm) and shall be slip-resistant. Guardrails shall be installed on each side of a bridge and shall not be less than 42 inches (1067 mm) in height from the bridge surface. Balusters of guardrails shall be installed so as to prevent a 4 inch (102 mm) sphere to pass.

401.5.1 Decorative Bridges, Walking Paths, Walkways, Stepping Stones, Lily Pads. Decorative bridges, walking paths, walkways, stepping stones, lily pads or similar decorative or play features over the surface of the water that are not intended for patrons to pass under shall be installed in accordance with manufacturer or registered design professional as approved by the Authority Having Jurisdiction. Such decorative features shall be designed to prevent entanglement or entrapment.

SUBSTANTIATION:

There are many decorative features such as lily pads, walkways, paths, or bridges that are not intended for people to swim underneath. This provision will bring awareness to the safety concern of entrapment avoidance when the installation of such features is considered.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

021

Code Number:

2024 USPSHTC

Section(s):

401.5.1

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:Request to accept the code change proposal **as modified** by this public comment.**401.0 General.**

(Section 401.5 shown for information purposed only)

401.5 Bridges. Where bridges are installed over a pool or lazy river and intended for patrons to pass under, they shall have a vertical clearance of not less than 7 feet (2134 mm) from the bottom of the pool and have not less than a 4 foot (1219 mm) vertical clearance from the water surface to any structure or feature. Bridges shall have a width of not less than 48 inches (1219 mm) and shall be slip-resistant. Guardrails shall be installed on each side of a bridge and shall not be less than 42 inches (1067 mm) in height from the bridge surface. Balusters of guardrails shall be installed so as to prevent a 4 inch (102 mm) sphere to pass. Bridges or walkways that are not intended for a person to pass under shall be designed to prevent access or entrapment under the bridge.

~~**401.5.1 Decorative Bridges, Walking Paths, Walkways, Steppingstones, Lily Pads.** Decorative bridges, walking paths, walkways, stepping stones, lily pads or similar decorative or play features over the surface of the water that are not intended for patrons to pass under shall be installed in accordance with manufacturer or registered design professional as approved by the Authority Having Jurisdiction. Such decorative features shall be designed to prevent entanglement or entrapment.~~

Substantiation:

The text in Section 401.5.1 (Decorative Bridges, Walking Paths, Walkways, Steppingstones, Lily Pads) is being removed because its requirements duplicate provisions already established in Section 401.5 (Bridges) governing bridges and walkways. The general Section 401.5 already specifies the minimum safety, clearance, and design criteria for structures installed over or adjacent to water, including requirements to prevent access, entrapment, and other hazards. The additional language in former Section 401.5.1 does not provide new technical guidance, introduces redundant terminology, and creates unnecessary repetition within the code.

Removing the repetitive section improves clarity, eliminates confusion caused by overlapping requirements, and ensures consistent enforcement by relying on a single, comprehensive set of criteria for bridges, walkways, stepping elements, and similar features. This revision streamlines the code without altering the original safety intent.

Comment 2**Item #:**

021

Code Number:

2024 USPSHTC

Sections(s):

401.5.1

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

Proposed Text:Request to accept the code change proposal as modified by this public comment.**401.0 General.**

401.5 Bridges. (portion of text not shown remains unchanged)

401.5.1 Decorative Bridges, Walking Paths, Walkways, and Steppingstones, ~~Lily Pads~~. Decorative bridges, walking paths, walkways, stepping stones, ~~lily pads~~ or similar decorative ~~or play~~ features on or over the surface of the water that are not intended for patrons to pass under shall be installed in accordance with manufacturer or registered design professional as approved by the Authority Having Jurisdiction. Such decorative features shall be designed to prevent entanglement or entrapment.

Substantiation:

The term “lily pads” is being removed from Section 401.5.1 (decorative Bridges, Walking Paths, Walkways, and Stepping Stones) because its inclusion creates ambiguity regarding the type of feature being regulated. In aquatic facilities, lily pads may refer to floating play elements intended for temporary recreational use, or to permanently installed decorative elements that are not intended to support patron activity. Because these two product types serve different purposes and fall under different design and safety expectations, retaining the term within this section may lead to misinterpretation by designers, operators, and regulators.

By striking “lily pads” from Section 401.5.1, the revised language more accurately limits the scope of the provision to permanent decorative bridges, walkways, stepping pads, and similar fixed features. This improves enforceability by ensuring the section is not mistakenly applied to floating play components, which are regulated separately under the aquatic play feature requirements. The update eliminates confusion, aligns the section with its intended purpose, and prevents unnecessary or inappropriate application of structural installation requirements to nonstructural floating play devices.

Comment 3**Item #:**

021

Code Number:

2024 USPSHTC

Sections(s):

908.9

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:**

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

908.0 Aquatic Venues.

908.9 Aquatic Play Feature, Lily Pads. Lily pads or similar decorative or play features on the surface of the water that are not intended for patrons to pass under shall be installed in accordance with manufacturer or registered design professional as approved by the Authority Having Jurisdiction. Such decorative features shall be designed to prevent entanglement or entrapment.

Substantiation:

This new section is being added to address lily pads as a distinct type of aquatic play feature that was not appropriately covered under Section 401.5.1 (Decorative Bridges, Walking Paths, Walkways, Stepping Stones, Lily Pads). In that section, the term “lily pads” created ambiguity because it could refer either to decorative permanent features or to floating play elements. Floating lily pads used in aquatic play environments function differently, carry different safety considerations, and require different installation and performance requirements than decorative, nonloadbearing features.

By relocating and addressing lily pads under Section 908.0 (Interactive Water Play Venues), the code now clearly regulates these components within the appropriate context of aquatic play features. This dedicated section establishes clear safety requirements; including installation criteria and protection against entanglement and entrapment, ensuring consistent application and improving clarity for designers, operators, inspectors, and the Authority Having Jurisdiction. The update eliminates ambiguity, aligns the requirements with industry practice for play features, and provides a more enforceable and technically accurate framework for regulating lily pad type play components.

Item #:

027

Code Number:

2024 USPSHTC

Section Number:

402.13

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Revise text

Proposed Text :**402.0 Swimming Pools.****402.13 Swimouts.** Where swimouts are installed, swimout benches shall comply with the following:

(1) Swimouts installed for the purpose of entry and exit of a pool shall be installed with stairs in accordance with Section 802.4.

(2) Swimouts shall not be installed in the diving area of a pool.

(3) The front edge of a swimout shall be distinguished by a stripe of a contrasting color on the vertical and horizontal surfaces having a width not less than 3/4 of an inch (19.1 mm) and not more than 2 inches (51 mm).

(4) The horizontal surface of a swimout shall comply with the following:

(a) Shall have an unobstructed surface area of not less than 240 square inches (0.155 m²).

(b) Shall have an unobstructed horizontal depth of not less than 10 inches (254 mm).

(c) Shall not have a vertical depth of less than 20 inches (508 mm) below the pool water surface.

(d) Swimouts in lazy rivers or venues with moving water shall be designed to avoid contact with swimmer(s).**SUBSTANTIATION:**

Swimouts are underwater features needed for activities and serve as safety platforms for people using the venue. When such features are installed in venues with flowing water such as lazy rivers, these protruding underwater features should be designed to avoid entanglement and obstructions of the people passing past these swimouts.

Committee Action:

Accept As Amended by the TC

Proposed Text :**402.0 Swimming Pools.****402.13 Swimouts.** Where swimouts are installed, swimout benches shall comply with the following:

(1) Swimouts installed for the purpose of entry and exit of a pool shall be installed with stairs in accordance with Section 802.4.

(2) Swimouts shall not be installed in the diving area of a pool.

(3) The front edge of a swimout shall be distinguished by a stripe of a contrasting color on the vertical and horizontal surfaces having a width not less than 3/4 of an inch (19.1 mm) and not more than 2 inches (51 mm).

(4) The horizontal surface of a swimout shall comply with the following:

(a) Shall have an unobstructed surface area of not less than 240 square inches (0.155 m²).

(b) Shall have an unobstructed horizontal depth of not less than 10 inches (254 mm).

(c) Shall not have a vertical depth of less than 20 inches (508 mm) below the pool water surface.

(d) Swimouts in lazy rivers or venues with moving water shall be designed to avoid contact with swimmer(s). Shall be designed and located outside of the primary flow path of lazy rivers to prevent unintended contact with swimmers navigating the watercourse.

Committee Statement:

Item #027 is being amended to clarify that swimouts must be designed to prevent unintended contact with swimmers moving through the watercourse.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

10

NEGATIVE:

1

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

PRYSTUPA: The word "stripe" should be stricken, and the word "marking" should be added. The marking can be a tile or complementary color to delineate the separation.

Comment 1

Item #:

027

Code Number:

2024 USPSHTC

Sections(s):

402.14

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

402.0 Swimming Pools.

402.14 Swimouts. Where swimouts are installed, swimout benches shall comply with the following:

(1) Swimouts installed for the purpose of entry and exit of a pool shall be installed with stairs in accordance with Section 802.4.(2) Swimouts shall not be installed in the diving area of a pool.(3) The front edge of a swimout shall be distinguished by a stripe marking of a contrasting color on the vertical and horizontal surfaces having a width not less than 3/4 of an inch (19.1 mm) and not more than 2 inches (51 mm). The marking shall be located not more than 2 inches from the horizontal edge.(4) The horizontal surface of a swimout shall comply with the following:(a) Shall have an unobstructed surface area of not less than 240 square inches (0.155 m²).(b) Shall have an unobstructed horizontal depth of not less than 10 inches (254 mm).(c) Shall not have a vertical depth of less than

20 inches (508 mm) below the pool water surface.(d) Shall be designed and located outside of the primary flow path of lazy rivers to prevent unintended contact with swimmers navigating the watercourse.

Substantiation:

The term “stripe” is being replaced with “marking” to allow greater flexibility in how the front edge of a swimout may be distinguished. As noted in the Technical Committee discussion, a marking may consist of tile, contrasting color material, or other permanent, high-visibility methods that serve the same functional purpose.

Additionally, specifying that the marking must be located not more than 2 inches from the horizontal edge ensures consistent visibility for swimmers and inspectors and supports clear delineation of the swimout boundary across different pool designs and materials.

Item #:

029

Code Number:

2024 USPSHTC

Section Number:

402.16

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Add new text

Proposed Text :

402.0 Swimming Pools.

402.16 Deck Covers and Lids. Deck covers and lids shall be installed flush with the deck. Where deck covers or lids are removed for maintenance, public access shall not be permitted until such covers or lids are secured in place.

SUBSTANTIATION:

Deck covers and lids are a safety feature and pose a hazard when not properly installed or not installed at all. The additional text requires that the location(s) where such covers are removed for maintenance should be closed to public access to prevent any mishaps.

Committee Action:

Accept As Amended by the TC

Proposed Text :

402.0 Swimming Pools.

402.16 Deck Covers and Lids. Deck covers and lids shall be installed flush with the deck and secured in place. Where deck covers or lids are removed for maintenance, public access shall not be permitted until such covers or lids are secured in place.

Committee Statement:

The proposed maintenance requirement is unenforceable, as code officials are not present during maintenance activities, making compliance difficult to verify. Therefore, the second sentence is being removed. Additionally, the phrase "secured in place" is being added to provide greater clarity regarding the intent of the section.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF AFFIRMATIVE:

PRYSTUPA: Wrote the opinion for the committee

Comment 1

Item #:

029

Code Number:

2024 USPSHTC

Sections(s):

402.17

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

402.0 Swimming Pools.

402.17 Deck Covers and Lids. Covers and lids such as deck covers, skimmer lids, and safety cover anchor lids shall be installed flush with the deck and secured in place. When a device is removed from a recessed deck anchor, the opening shall be covered and secured.

Substantiation:

The added language clarifies installation and safety requirements for deck covers, skimmer lids, and safety cover anchor lids by ensuring these components are installed flush with the deck surface and secured in place. Deck elements that are raised, loose, or improperly seated create tripping hazards, compromise accessibility, and may lead to injuries for patrons walking on or around the pool deck.

Additionally, the new requirement to cover and secure any opening when a device is removed from a recessed deck anchor addresses an important safety gap. Exposed recessed anchors create fall, trip, and entrapment hazards and may also damage equipment or allow debris to enter the recirculation system. Mandating that openings be immediately covered and secured when devices are removed ensures continuous protection of deck users and supports consistent enforcement by inspectors and operators. Overall, the added text improves clarity, enhances safety, and aligns installation practices with typical field conditions and widely recognized industry standards for aquatic facility deck safety.

Item #:

030

Code Number:

2024 USPSHTC

Section Number:

402.2

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Revise text

Proposed Text :**402.0 Swimming Pools.**

402.2 Construction Material. A pool shall be constructed of reinforced concrete, fiberglass, stainless steel, or other approved materials that are impervious and provide a watertight structure. Porous material shall have a watertight surface coating or liner.

(shown for information purposes only)

402.2.1 Dissimilar Material. Where a pool structure is to be lined with dissimilar material, the two materials shall be continually and permanently bonded so not to separate at any time or place.

402.2.2 Freeze Protection. Where located in areas subject to freezing, pools and appurtenances shall be protected and designed from damage due to freezing.

SUBSTANTIATION:

The proposed adds common material used in the pool construction. Although the text indicates “other approved materials,” these two materials are some of the more commonly used types and worth including in the section to avoid confusion or additional acceptance criteria in the field. Additionally, the text related to “porous” recognizes that some structurally appropriate material that may be porous will need to be coated to make it watertight.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

030

Code Number:

2024 USPSHTC

Sections(s):

402.2.2

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

402.0 Swimming Pools.

402.2 Construction Material. (text not shown remain unchanged)

402.2.2 Freeze Protection. Where located in areas subject to freezing, pools and appurtenances shall be protected and designed ~~from~~ to prevent damage due to freezing.

Substantiation:

The previous text in Section 402.2.2 was grammatically incorrect and created ambiguity in its intent. This clarification ensures that the requirement clearly states that pools and appurtenances must be designed to prevent damage caused by freezing conditions. Because Section 402.2 addresses construction materials and related design considerations, the updated language aligns the freeze-protection requirement with the section's purpose while improving readability and enforceability.

Item #:

032

Code Number:

2024 USPSHTC

Section Number:

402.7

SUBMITTER:

Alison Osinski

Organization Name:

Aquatic Consulting Services

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :**402.0 Swimming Pools.**

402.7 Finishes and Surfaces. The interior finished surfaces of a swimming pool shall be in accordance with the following:

- (1) Be nonabrasive.
- (2) Be slip-resistant in accordance with Section 315.0.
- (3) Have a high contrast and not obscure objects or surfaces within the pool or spa to facilitate the identification of objects and markers within such area.
- (4) Be white or light colored.

Exception: Pools used for competitive diving, special use pools, or as approved by the Authority Having Jurisdiction.

- (5) Be waterproof.
- (6) Withstand repeated brushing, scrubbing, and cleaning.
- (7) Paint, fiberglass, or epoxy coated finishes shall be non-toxic, water resistant, of one single light color, and shall continually and permanently bond so as not to separate.
- (8) Paint and coatings installed within an aquatic facility or natatorium shall comply with UL 2818.
- (9) Pool surfaces shall be resistant to UV degradation, pool chemicals, water temperatures, and suitable for the application.

SUBSTANTIATION:

The "one single color" in (7) is now addressed in the exception of (4). There are school pools with logos or competitive pools that require specific requirements. Additionally, line item (9) is being added to aquatic pool surface that seem obvious but were not previously added as a minimum requirement.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:
032

Code Number:
2024 USPSHTC

Sections(s):
402.7

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

402.0 Swimming Pools.

402.7 Finishes and Surfaces. The interior finished surfaces of a swimming pool shall be in accordance with the following:

- (1) Be nonabrasive.
- (2) Be slip-resistant in accordance with Section 315.0.
- (3) Have a high contrast and not obscure objects or surfaces within the pool or spa to facilitate the identification of objects and markers within such area.
- (4) Be white or light colored.

Exception: Pools used for competitive diving, special use pools, or as approved by the Authority Having Jurisdiction.

- (5) Be waterproof.
- (6) Withstand repeated brushing, scrubbing, and cleaning.
- (7) Paint, fiberglass, or epoxy coated finishes shall be non-toxic, ~~water resistant~~, of one single light color, and shall continually and permanently bond so as not to separate.
- (8) Paint and coatings installed within an aquatic facility or natatorium shall comply with UL 2818.
- (9) Pool surfaces shall be resistant to UV degradation, pool chemicals, water temperatures, and suitable for the application.

Substantiation:

The revision removes the term “water resistant” because it conflicts with the requirement that interior pool finishes be “waterproof” in line item (5). These two terms have different technical meanings and performance expectations. Waterproof materials are designed to prevent the passage of water under all anticipated conditions of use, while water-resistant materials merely slow water penetration but do not prevent it. Allowing both terms in the same section creates ambiguity regarding the durability, integrity, and suitability of finishes installed within a constantly submerged environment.

Because pool interior surfaces are continuously exposed to water pressure, chemicals, and mechanical cleaning, finishes must maintain a watertight barrier to protect underlying structures, prevent delamination, and ensure long-term performance. Removing the conflicting term clarifies the performance requirement, eliminates potential misinterpretation by installers and inspectors, and ensures the section aligns with recognized construction and material-performance standards for aquatic environments.

Comment 2

Item #:

032

Code Number:

2024 USPSHTC

Sections(s):

402.7, 417.2

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

402.0 Swimming Pools.

402.7 Finishes and Surfaces. The interior finished surfaces of a swimming pool shall be in accordance with the following:

- (1) Be nonabrasive.
- (2) Be slip-resistant in accordance with Section 315.0.
- (3) Have a high contrast and not obscure objects or surfaces within the pool or spa to facilitate the identification of objects and markers within such area.
- (4) Be white or light colored.

Exception: Pools used for competitive diving, special use pools, or as approved by the Authority Having Jurisdiction.

- (5) Be waterproof.
- (6) Withstand repeated brushing, scrubbing, and cleaning.
- (7) Paint, fiberglass, or epoxy coated finishes shall be non-toxic, water resistant, of one single light color, and shall continually and permanently bond so as not to separate.

~~(8) Paint and coatings installed within an aquatic facility or natatorium shall comply with UL 2818.~~

(9) Pool surfaces shall be resistant to UV degradation, pool chemicals, water temperatures, and suitable for the application.

417.0 Natatoriums.

417.2 Interior Finish. The interior finish of a natatorium shall be designed for an indoor relative humidity of not less than 80 percent. Paint and coatings ~~installed within~~ applied inside an aquatic facility or natatorium shall comply with UL 2818.

Substantiation:

The UL 2818 (GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings) standard is not applicable to swimming pool wall surfaces and is incorrectly referenced in Section 402.7 (Finishes and Surfaces). For this reason, Note 8 is being removed. The standard is also referenced in Section 417.2 (Interior Finishes), which correctly applies to interior building surfaces; however, the wording in that section required revision because coatings are not "installed," they are **applied**.

UL 2818 is not a standard for swimming pool surfaces, equipment, or safety. Instead, it is the standard used for the GREENGUARD Certification Program for Chemical Emissions for building materials, finishes, and furnishings. The purpose of the standard is to ensure that certified products exhibit low volatile organic compound (VOC) emissions to support improved indoor air quality. It is typically applied to items such as furniture, flooring, paints, and construction materials. While a pool deck material may be UL 2818 GREENGUARD certified, swimming pools and their associated equipment are not within the scope of this standard.

For reference, the UL 2818 standard purpose and scope are as follows:

UL 2818-2022 (GREENGUARD Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings):

1 Purpose

1.1 UL Environment has created this document to establish a nationally recognized voluntary program for qualifying building materials, finishes and furnishings as certified low emitting products for the indoor environment.

2 Scope

2.1 The document is applicable to the determination of organic emissions from building materials, finishes and furnishings (See Appendix A). This is a product performance-based document, and the complete toxicity effects of the emissions are beyond the scope of the program.

2.2 The use of environmental test chambers and indoor exposure models to characterize the dynamic emissions from products and their components are well established.

2.3 The achievement of test results, that have meaning within the context of the program, require rigorous sample selection procedures, defined sample collection and handling procedures, and the employment of precise and accurate analytical measurement systems and procedures. Additionally, the manufacturer of the product(s) evaluated in reference to the requirements set forth by the document must have in place a production quality control system that is capable of assuring products shall be manufactured with consistently close results in similar emissions characteristics over time. Such relevant requirements are set forth in standards and procedures that are referenced by this document.

2.4 This document does not purport to address the safety concerns, if any, associated with its use. It is the responsibility of the user of the document to establish appropriate safety and health practices, as well as to determine what regulatory limitations, if any, may exist.

Comment 3

Item #:
032

Code Number:
2024 USPSHTC

Sections(s):

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:
402.7, 417.2, Table 1001.1

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

402.0 Swimming Pools.

402.7 Finishes and Surfaces. The interior finished surfaces of a swimming pool shall be in accordance with the following:

- (1) Be nonabrasive.
- (2) Be slip-resistant in accordance with Section 315.0.
- (3) Have a high contrast and not obscure objects or surfaces within the pool or spa to facilitate the identification of objects and markers within such area.
- (4) Be white or light colored.

Exception: Pools used for competitive diving, special use pools, or as approved by the Authority Having Jurisdiction.

- (5) Be waterproof.
- (6) Withstand repeated brushing, scrubbing, and cleaning.
- (7) Paint, fiberglass, or epoxy coated finishes shall be non-toxic, water resistant, of one single light color, and shall continually and permanently bond so as not to separate.
- ~~(8) Paint and coatings installed within an aquatic facility or natatorium shall comply with UL 2818.~~
- (9) Pool surfaces shall be resistant to UV degradation, pool chemicals, water temperatures, and suitable for the application.

417.0 Natatoriums.

417.2 Interior Finish. The interior finish of a natatorium shall be designed for an indoor relative humidity of not less than 80 percent. ~~Paint and coatings installed within an aquatic facility or natatorium shall comply with UL 2818.~~

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
UL 2818-2022	Chemical Emissions for Building Materials, Finishes and Furnishings	Paint and Coatings	402.7, 417.2

(portion of table not shown remain unchanged)

Substantiation:

The promulgator has indicated that the UL 2818 (GREENGUARD Certification Program for Chemical Emissions for Building Materials, Finishes and Furnishings) standard has been deactivated. The promulgator also indicated that the standard is now withdrawn and will not undergo future revisions. For this reason, all sections referencing UL 2818, including Section 402.7(8) (Finishes and Surfaces), Section 417.2 (Interior Finish), and Table 1001.1 (Referenced Standards) are being deleted.

Item #:

035

Code Number:

2024 USPSHTC

Section Number:

503.1

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Revise text

Proposed Text :**503.0 Turnover Time.**

503.1 General. The entire design of matched components shall have a capacity to provide a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer's instructions. Maximum turnover time shall be required as follows:

- (1) Private pools – 8 hours
- (2) Public pools – 6 hours
- (3) Wading pools – 1 hour
- (4) Private spas and hot tubs – 1 hour
- (5) Public spas and hot tubs – 1/2 hour
- (6) Therapy pool – 1/2 hour
- (7) Water slides and landing pools – 2 hours
- (8) Wave pools – 3 hours
- (9) Leisure rivers – 3 hours
- (10) Spray grounds – 1/2 hour (where the circulation system is turned off for the night, or when the venue is drained and refilled, the circulation system shall be run for not less than 4 turnover periods prior to permitting entry).
- (11) Activity Pools – 2 hours
- (12) Diving Pools – 8 hours
- (13) Surf Pools – venues shall maintain recreational water quality at all times.
- (14) Artificial white water courses (pumped) – venues shall maintain recreational water quality at all times.
- (15) Artificial lagoons - venues shall maintain recreational water quality at all times. Where designated swimming areas are identified, those areas shall meet pool water quality standards.

SUBSTANTIATION:

Many spray grounds shut off their circulation systems. The recirculation system shall be in operation at all times that the spray ground is open for use and shall have a minimum of four turnover cycles prior to opening for proper disinfection and filtration as it gives the minimum time for the chemicals to circulate and balance.

Committee Action:

Accept As Amended by the TC

Proposed Text :**503.0 Turnover Time.**

503.1 General. The entire design of matched components shall have a capacity to provide a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer's instructions. Maximum turnover time shall be required as follows:

- (1) Private pools – 8 hours
- (2) Public pools – 6 hours
- (3) Wading pools – 1 hour
- (4) Private spas and hot tubs – 1 hour
- (5) Public spas and hot tubs – 1/2 hour
- (6) Therapy pool – 1/2 hour
- (7) Water slides and landing pools – 2 hours
- (8) Wave pools – 3 hours
- (9) Leisure rivers – 3 hours
- (10) Spray grounds – 1/2 hour (where the circulation, filtration, or disinfection system, or a combination thereof, is turned off for the night an hour or more, or when the venue is drained and refilled, the circulation system shall be run for not less than 4 turnover periods prior to permitting entry)
- (11) Activity Pools – 2 hours
- (12) Diving Pools – 8 hours
- (13) Surf Pools – venues shall maintain recreational water quality at all times.
- (14) Artificial white water courses (pumped) – venues shall maintain recreational water quality at all times.
- (15) Artificial lagoons - venues shall maintain recreational water quality at all times. Where designated swimming areas are identified, those areas shall meet pool water quality standards.

Committee Statement:

Item #035 is being amended to clarify that when the circulation, filtration, or disinfection system is shut off for an hour or more, a turnover time of not less than four hours is required. This requirement is based on evidence that microbial growth can begin within that timeframe. Additionally, the phrase “for the night” is being removed, as it is unnecessary and ambiguous.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

8

NEGATIVE:

3

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

CASE: Splash pads are considered an increased risk venue. The 30-min turnover time should remain. Moving to a minimum 4-hour turnover language model would mean that a 4000 gallon collection tank would only need to move 22 gallons per minute (based on a dusk to dawn closure) If based on dusk to 10 am, this lowers it to 16 gpm. At these rates, sanitizer feed systems, pH control systems, and UV systems will cease to function. Never mind the impacts on filtration. With the ongoing enteric disease risks, along with the emergence of N. Folweri and PAM, these type turnover rates are dangerous to say the least. Moving away from a 30-min turnover also moves this code out of harmony with the MAHC.

PRYSTUPA: The builder should be responsible for installing the system to meet the turnover rate requirements specified in the construction plans. The operation permit would or should determine the turnover parameters for operation with respect to shut down or maintenance. The code should focus on construction compliance, not operational concerns.

RODIO: I have a problem with the code having maintenance provisions as the AHJ's do not have the ability to inspect after final approval. Maybe this falls under the health department?

Comment 1

Item #:
035

Code Number:
2024 USPSHTC

Sections(s):
503.1

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

503.0 Turnover Time.

503.1 General. The entire design of matched components shall be capable of providing a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer's instructions. Maximum turnover times for aquatic venues shall be in accordance with the following:

(1) - (16) (text not shown remain unchanged)

(17) Public Cold plunge – 30 minutes.

Substantiation:

A 30 minute turnover time for public cold plunge pools aligns with the turnover requirements for spas and hot tubs, which are similarly small volume, high use venues where rapid water replacement is necessary to maintain appropriate water quality. Although cold plunge pools operate at significantly lower temperatures than hot tubs, resulting in reduced microbial growth rates compared to warm water environments, these venues still experience frequent bather load, high skin cell shedding, and direct body surface contact with the water.

Because cold plunge vessels rely on rapid water circulation to evenly distribute disinfectant and reduce the accumulation of localized contaminant loads, a faster turnover interval improves both mixing effectiveness and chemical management. A 30 minute turnover ensures that disinfectant residuals reach all portions of the basin, prevent stagnation, and support consistent treatment throughout the venue.

Additionally, cold plunge pools used in wellness, recovery, and therapeutic settings often serve multiple users in rapid succession. The reduced water temperature slows chlorine reaction kinetics and pathogen inactivation rates, making circulation, rather than temperature, an essential control measure for maintaining sanitary conditions. Setting the maximum turnover time at 30 minutes harmonizes the cold plunge requirement with established industry practice for similar high interaction venues, supports improved public health protection, and provides operators with a clear and enforceable performance criterion.

Comment 2

Item #:

035

Code Number:

2024 USPSHTC

Sections(s):

503.1

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

503.0 Turnover Time.

503.1 General. The entire design of matched components shall be capable of providing a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer's instructions. Maximum turnover times for aquatic venues shall be in accordance with the following:

- (1) Private pools – 8 hours
- (2) Public pools – 6 hours
- (2) Public pools – 6 hours
- (3) Wading pools – 1 hour

(where the circulation, filtration, or disinfection system, or a combination thereof, is turned off for an hour or more, or when the venue is drained and refilled, the entire system, including all features, shall be required to be run a minimum of 4 turnover periods prior to permitting entry).

- (4) Private spas and hot tubs – 1 hour
- (5) Public spas and hot tubs – 1/2 hour

(where the circulation, filtration, or disinfection system, or a combination thereof, is turned off for an hour or more, or when the venue is drained and refilled, the entire system, including all features, shall be required to be run a minimum of 4 turnover periods prior to permitting entry).

- (6) Therapy pool – 1/2 hour

(where the circulation, filtration, or disinfection system, or a combination thereof, is turned off for an hour or more, or when the venue is drained and refilled, the entire system, including all features, shall be required to be run a minimum of 4 turnover periods prior to permitting entry).

- (7) Water slides and landing pools – 2 hours

(where the circulation, filtration, or disinfection system, or a combination thereof, is turned off for an hour or more, or when the venue is drained and refilled, the entire system, including all features, shall be required to be run a minimum of 4 turnover periods prior to permitting entry).

- (8) Wave pools – 3 hours
- (9) Leisure rivers – 3 hours
- (10) Spray grounds – 1/2 hour

(where the circulation, filtration, or disinfection system, or a combination thereof, is turned off for an hour or more, or when the venue is drained and refilled, ~~the circulation system shall be run for not~~ the entire system, including all features, shall be required to be run a minimum of less than 4 turnover periods prior to permitting entry)

- (11) Activity Pools – 2 hours
- (12) Diving Pools – 6 hours

(13) Surf Pools – The water quality shall meet the local potable water standards for public use.

(14) Artificial white water courses (pumped) – The water quality shall meet the local potable water standards for public use.

(15) Artificial lagoons – The water quality shall meet local potable water standards for public use. Isolated sections of water designated for swimming shall meet the minimum water chemistry of Table 508.3.

(16) Float tanks – as recommended by the manufacturer.

Substantiation:

There has been ongoing concern regarding aquatic venues that shut down circulation, filtration, or disinfection systems for extended periods, such as overnight closures or during maintenance, without recognizing that the system must be brought back to a fully circulated, filtered, and disinfected condition before patrons are allowed to re enter the water. When these systems are restarted, chemical feed equipment can introduce disinfectants at concentrations that are significantly higher than safe operating levels. This may result in localized pockets of elevated chlorine or other treatment chemicals within the recirculation system, pipes, or venue basin.

Requiring the system to operate for a minimum of four complete turnover periods ensures that the entire volume of water, including all features, is fully mixed, filtered, and disinfected before swimmers return. This circulation period is essential to restore uniform water quality, eliminate stagnant or under treated areas, and prevent exposure to potentially hazardous concentrations of chemicals. The added language improves health and safety protections, clarifies operational expectations following system shutdowns, and enhances the enforceability of the turnover requirements.

Item #:

037

Code Number:

2024 USPSHTC

Section Number:

503.1

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Revise text

Proposed Text :**503.0 Turnover Time.**

503.1 General. The entire design of matched components shall have a capacity to provide a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer's instructions. Maximum turnover time shall be required as follows:

- (1) Private pools – 8 hours
- (2) Public pools – 6 hours
- (3) Wading pools – 1 hour
- (4) Private spas and hot tubs – 1 hour
- (5) Public spas and hot tubs – 1/2 hour
- (6) Therapy pool – 1/2 hour
- (7) Water slides and landing pools – 2 hours
- (8) Wave pools – 3 hours
- (9) Leisure rivers – 3 hours
- (10) Spray grounds – 1/2 hour
- (11) Activity Pools – 2 hours
- (12) Diving Pools – 8 hours
- (13) Surf Pools – ~~venues shall maintain recreational water quality at all times.~~ The water quality shall meet the minimum local bacterial water standard requirements for public use.
- (14) Artificial white water courses (pumped) – ~~venues shall maintain recreational water quality at all times.~~ The water quality shall meet the minimum local bacterial water standard requirements for public use.
- (15) Artificial lagoons - ~~venues shall maintain recreational water quality at all times. Where designated swimming areas are identified, those areas shall meet pool water quality standards.~~ The water quality shall meet the minimum local bacterial water standard requirements for public use. Isolated sections of water designated for swimming shall meet the minimum water chemistry of Table 508.3.

SUBSTANTIATION:

The updated water quality text provides specific requirements for water quality. Some local bacterial requirements for swimming in lakes or ponds are typically measured by testing for E. coli bacteria. The State of Michigan guidelines consider a beach safe if a single sample has less than 300 colonies of E. coli per 100 ml, and the geometric mean (average of multiple samples) is less than 130 colonies per 100 ml. These limits are designed to protect swimmers from potential illness caused by fecal contamination. These requirements differ by region, however, have the same intent of protecting the public. Additionally, isolated water bodies such as artificial lagoons will be required to meet water chemistry requirements of Table 508.3.

Committee Action:

Accept As Amended by the TC

Proposed Text :

503.0 Turnover Time.

503.1 General. The entire design of matched components shall have a capacity to provide a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer’s instructions. Maximum turnover time shall be required as follows:

- (1) Private pools – 8 hours
- (2) Public pools – 6 hours
- (3) Wading pools – 1 hour
- (4) Private spas and hot tubs – 1 hour
- (5) Public spas and hot tubs – 1/2 hour
- (6) Therapy pool – 1/2 hour
- (7) Water slides and landing pools – 2 hours
- (8) Wave pools – 3 hours
- (9) Leisure rivers – 3 hours
- (10) Spray grounds – 1/2 hour
- (11) Activity Pools – 2 hours
- (12) Diving Pools – 8 hours
- (13) Surf Pools – The water quality shall meet the ~~minimum local bacterial water standard requirements~~ **local potable water standards** for public use.
- (14) Artificial white water courses (pumped) – The water quality shall meet the ~~minimum local bacterial water standard requirements~~ **local potable water standards** for public use.
- (15) Artificial lagoons - The water quality shall meet the ~~minimum local bacterial water standard requirements~~ **local potable water standards** for public use. Isolated sections of water designated for swimming shall meet the minimum water chemistry of Table 508.3.

Committee Statement:

The reference to “local bacterial water standards” is vague and ambiguous. Instead, the term “local potable water standards” is being used, as the Authority Having Jurisdiction will have established minimum parameters for potable water quality. In addition to the amendments to Item #037, the committee also agrees with the updates to Section 503.1 (General) in Item #035 and Item #036. Therefore, the changes in each of these items will be incorporated.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

10

NEGATIVE:

1

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

CASE: There is a massive difference between the original text and the proposed text. If "local potable water standards" were enforced, not just these facilities but virtually all public pools would be closed. Recreational water does not equal drinking water.

EXPLANATION OF AFFIRMATIVE:

PRYSTUPA: These items fall under operation, more so than construction.

Comment 1

Item #:

037

Code Number:

2024 USPSHTC

Sections(s):

503.1

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

503.0 Turnover Time.

503.1 General. The entire design of matched components shall be capable of providing a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer’s instructions. Maximum turnover times for aquatic venues shall be in accordance with the following:

- (1) Private pools – 8 hours
- (2) Public pools – 6 hours
- (3) Wading pools – 1 hour
- (4) Private spas and hot tubs – 1 hour
- (5) Public spas and hot tubs – 1/2 hour
- (6) Therapy pool – 1/2 hour
- (7) Water slides and landing pools – 2 hours
- (8) Wave pools – 3 hours
- (9) Leisure rivers – 3 hours
- (10) Spray grounds – 1/2 hour (where the circulation, filtration, or disinfection system, or a combination thereof, is turned off for an hour or more, or when the venue is drained and refilled, the circulation system shall be run for not less than 4 turnover periods prior to permitting entry)
- (11) Activity Pools – 2 hours
- (12) Diving Pools – 6 hours
- ~~(13) Surf Pools – The water quality shall meet the local potable water standards for public use.~~
- ~~(14) Artificial white water courses (pumped) – The water quality shall meet the local potable water standards for public use.~~
- ~~(15) Artificial lagoons – The water quality shall meet local potable water standards for public use. Isolated sections of water designated for swimming shall meet the minimum water chemistry of Table 508.3.~~
- (13)** Float tanks – as recommended by the manufacturer.

504.0 Open Water Venues.

504.1 Surf pools. Surf pools shall maintain sanitized recreational water quality as defined in EPA standards. In no case shall the monitoring results exceed 100 E. coli colony forming units (CFU) per 100 mL of water (100 CFU/100 mL).

504.2 Artificial White Water Courses. Artificial white water courses shall maintain sanitized recreational water quality as defined in EPA standards. In no case shall the monitoring results exceed 100 E. coli colony forming units (CFU) per 100 mL of water (100 CFU/100 mL).

504.3 Artificial Lagoons. Artificial lagoons shall maintain sanitized recreational water quality as defined in EPA standards. In no case shall the monitoring results exceed 100 E. coli colony forming units (CFU) per 100 mL of water (100 CFU/100 mL).

504.4 Dedicated Swimming Areas. Where an open water venue contains an isolated section of water designated for swimming, such designated swim area shall meet one of the following:

(1) The water quality shall meet the minimum water chemistry of Table 508.3, or

(2) Field testing shall demonstrate that 85 percent of not less than 75 test samples pass all the following criteria by:

(a) The Standard Plate Count (SPC) at a temperature of 95°F (35°C) shall not exceed 200 colonies per 1.0 ml.

(b) The Most Probable Number (MPN) of coliform bacteria shall not exceed 2.2 organisms per 100.0 ml. When the membrane filter test is used, the MPN shall not exceed 1.0 coliform organism per 50 ml.

(c) The MPN of enterococcal organisms shall not exceed 2.2 organisms per 100 ml. When the membrane filter test is used, the MPN of enterococcal organisms shall not exceed 1.0 enterococcal organism per 50 ml.

Substantiation:

Open water venues present concerns to bathers and users of such venues as the water conditions are difficult to maintain the way closed venues such as pools are. Open water venues can be a lake, the ocean, a river, or any similar body of water. We know of ocean being closed after rainfall or rivers and lakes to be closed because of unsafe water conditions. While many jurisdictions have health and safety guidelines to determine when an open water source is safe to permit swimmers to enter the water, some jurisdictions may not be sure of what to do. Additionally, open water venues that contain dedicated swimming areas need to be addressed as well to address health and safety concerns. The proposed provisions will provide minimum testing criteria for safe waters intended for patrons.

Surf pools, artificial white water courses, and artificial lagoons are the most popular types of open water venues. The new Section 504.0 (Open Water Venues) will replace the turnover rate recommendations. Since open water venues are so vast, there needs to be a method of determining the water quality. The new sections provide minimum requirements with recognized scientific parameters proven to be effective in providing health and safety in open waters.

OPEN WATER:

The proposed provisions and parameters are based on research from valid studies and found in the EPA. While the EPA contains a vast source of information, it was important to focus on the information related to open water. The following two sources contain scientific information and guidance on measuring E. coli in open water (E. coli parameter factsheet).

- (E. coli Parameter Factsheet) Factsheet On Water Quality Parameters

(https://www.epa.gov/system/files/documents/2021-07/parameter-factsheet_e.-coli.pdf)

In open water, water samples are tested for E. coli to make sure water is safe for activities like swimming, fishing, and canoeing. E. coli is used as a warning sign because it shows whether water may be contaminated by human or animal waste, which can also carry harmful bacteria and viruses. People who swim in or touch water with high levels of E. coli are more likely to get sick. Symptoms from swallowing harmful strains of E. coli can include vomiting and diarrhea. Large amounts of E. coli and other bacteria can also cause cloudy water, bad smells, and lower oxygen levels in the water, which can harm aquatic life.

DEDICATED SWIM AREA:

Open water venues that contain sections dedicated to swimming should contain water quality that is required for swimming pools. This may be difficult to achieve via one type of disinfection method depending on the swimming area design. For this reason, there are two options for providing swimming water quality. One is Table 508.3 (Water Chemistry) which is a standard for swimming pools, spas, and hot tubs. A second option is an EPA recognized test method for recreational swimming water. The following document provides established scientific data and guidelines for testing how well antimicrobial pesticides work when used as disinfectants or sanitizers in water systems, including drinking water and swimming pools.

- Product Performance Test Guidelines OCSP 810.2600: Disinfectants and Sanitizers for Use in Water – Efficacy Data Recommendations (<https://www.regulations.gov/document/EPA-HQ-OPPT-2009-0150-0018>)

For reference, the following acronyms SPC and MPN are defined as follows:

- The Standard Plate Count (SPC), also known as the Aerobic Plate Count (APC) or Total Plate Count (TPC), is a common microbiological method to estimate the total number of viable aerobic bacteria.
- The Most Probable Number (MPN) is a statistical method used in microbiology to estimate the concentration of viable microorganisms (like bacteria) in a sample, especially when numbers are low, by observing growth patterns in diluted samples across multiple tubes.

Item #:

038

Code Number:

2024 USPSHTC

Section Number:

503.1

SUBMITTER:

Samantha Liu

Organization Name:

Self

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

503.0 Turnover Time.

503.1 General. The entire design of matched components shall have a capacity to provide a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer's instructions. Maximum turnover time shall be required as follows:

(1) - (15) (remaining text unchanged)

(16) Float tanks – as recommended by the manufacturer**SUBSTANTIATION:**

Float tanks are common, and the turnover time is crucial for maintaining water quality and hygiene between users. Typically, health departments recommend 3-5 turnovers between each use. However, these tanks vary in size and capacity, so the recommended turnover time should be recommended by the manufacturer's specifications.

Committee Action:

Accept As Submitted

Committee Statement:

In addition to the accepted changes to Section 503.1 (General) in Item #035, Item #036, and Item #037, the committee also agrees with the proposed revisions to this same section in Item #038. Therefore, the changes in each of these items will be incorporated.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

10

NEGATIVE:

1

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

CASE: This language should be aligned with existing model language found in the MAHC. The MAHC language was crafted with input from float tank industry representatives.

Comment 1**Item #:**

038

Code Number:

2024 USPSHTC

Section(s):

503.1

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

503.0 Turnover Time.

503.1 General. The entire design of matched components shall be capable of providing a complete turnover of water in accordance with local and state codes or regulations, and the manufacturer's instructions. Maximum turnover times for aquatic venues shall be in accordance with the following:

(1) - (15) (text not shown remain unchanged)

(16) Float tanks – ~~as recommended by the manufacturer~~ Not less than three turnover times between users.

Substantiation:

Float tanks continue to grow in popularity, and establishing clear turnover requirements is essential for ensuring consistent water quality and user safety. Unlike traditional pools or spas, float tanks operate with unique hydraulic configurations, high user to water contact, and elevated concentrations of dissolved salts, all of which influence disinfection dynamics and circulation performance.

Industry research, including work conducted by the Flotation Tank Association (FTA), demonstrates that multiple turnover cycles are necessary to adequately filter, disinfect, and redistribute treatment chemicals between users. Requiring **not less than three complete turnover periods between users** ensures that the entire volume of water is fully circulated and treated, reducing the risk of localized contamination, insufficient disinfectant residuals, or uneven mixing following each use.

This requirement aligns with validated operational practices for float tank facilities and supports consistent public health protection. Additional technical guidance and performance recommendations can be found in the standards and research provided by the Flotation Tank Association (FTA):

<https://www.floatation.org/standards-regulations>

Item #:

040

Code Number:

2024 USPSHTC

Section Number:

507.1, 507.2

SUBMITTER:

Mark Hamilton

Organization Name:

Self

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :**507.0 Chemical Feed Equipment.**

507.1 General. An aquatic facility shall be equipped with chemical feed equipment that is in accordance with NSF/ANSI/CAN 50. Such equipment shall be sized and installed in accordance with the manufacturer's installation instructions, and shall comply with Section 507.1.1 through Section 507.1.4. Enclosed spaces or rooms containing chemical feed equipment shall be in accordance with Section 602.0.

507.2 Gas Chlorinators. Chlorine and chlorinating equipment shall be located in ~~a separate well-ventilated room~~ an equipment room in accordance with Section 602.0 that is located at or above ground level and does not contain other chemical feeding equipment. Electric motor operated chlorinators shall comply with UL 1081 and be installed in accordance with the manufacturer's installation instructions.

SUBSTANTIATION:

The provisions containing chemical feed equipment are being updated to added critical requirements for the spaces where these types of equipment are located. These spaces require ventilation, and the appropriate section is being added to cover these provisions.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

10

NEGATIVE:

0

ABSTAIN:

1

NOT RETURNED:

0

EXPLANATION OF ABSTAIN:

CASE: Gas chlorination in swimming pools should be banned. An affirmative vote here supports "gas," while a negative vote may eliminate specific safety mechanisms. The real vote should be if "gas chlorine" should be banned throughout the entire IAPMO code.

Comment 1**Item #:**

040

Code Number:

2024 USPSHTC

Sections(s):

507.2

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

507.0 Chemical Feed Equipment.

507.2 Gas Chlorinators. Chlorine and chlorinating equipment shall be located in **a separate well-ventilated** equipment room in accordance with Section 602.0 that is located at or above ground level and does not contain other chemical feeding equipment. Electric motor operated chlorinators shall comply with UL 1081 and be installed in accordance with the manufacturer's installation instructions.

(shown for information purposes only)

602.0 Installation Requirements.

602.1 General. Equipment shall be installed in accordance with the manufacturer's installation instructions. Equipment shall be accessible for cleaning, operating, maintenance, and servicing. Means shall be provided to prevent unauthorized access to equipment.

602.1.1 Marking. Equipment, piping, valves, and system components shall be marked in an approved manner to identify their function. System piping shall indicate the direction of flow.

602.2 Location. Equipment located outdoors shall either be listed for outdoor installation, or provided with approved protection from the outdoor elements that affect the operation, durability, or safety of such equipment. Equipment located indoors shall be contained within an enclosed room or space in accordance with Section 603.0.

602.3 Anchorage. Equipment designed to be fixed in position shall be securely fastened in place in accordance with the manufacturer's installation instructions. Supports for equipment shall be designed and constructed to sustain vertical and horizontal loads within the stress limitations specified in the building code.

602.4 Clearance. Clearances of listed equipment from combustible materials shall be as specified in the listing or on the rating plate. Unlisted equipment shall be installed in accordance with the manufacturer's installation instructions

and with clearances from combustible materials in accordance with the mechanical code.

603.0 Equipment Rooms or Enclosures.

603.1 General. Equipment rooms shall be in accordance with Section 602.1 through Section 602.4.

603.2 Floors. Flooring in equipment rooms shall be of liquid-tight, non-combustible construction in accordance with the building code. Floor drains shall be installed in accordance with the plumbing code.

603.3 Indoor Access. Where openings to an equipment room are provided within the aquatic facility, they shall be protected by a self-closing door assembly with a gasketed doorframe. The closing mechanism shall not have a hold-open feature.

603.4 Mechanical Ventilation. Enclosed rooms and spaces containing equipment shall be provided with mechanical ventilation and exhaust in accordance with the mechanical code and Section 603.4.1 or Section 603.4.2 as applicable.

603.4.1 Chemical Feed Equipment. The mechanical ventilation system shall be designed to provide a ventilation

rate of not less than 60 ACH. The exhaust system serving the room or space shall be independent of other exhaust systems. The makeup air supply locations shall be positioned relative to the exhaust air locations to avoid short-circuiting. Inlets to exhaust ducts shall be located not more than 12 inches (305 mm) above the floor.

603.4.2 Ozone Generating Equipment. The mechanical ventilation system shall be designed to provide a ventilation rate of not less than 6 ACH. The exhaust system serving the room or space shall be independent of other exhaust systems. The makeup air supply locations shall be positioned relative to the exhaust air locations to avoid short-circuiting. Inlets to exhaust ducts shall be located not more than 18 inches (457 mm) from the ceiling.

603.5 Storage of Chemicals. Storage of chemicals shall comply with the building code and the fire code.

Combustion, HVAC, and electrical equipment shall not be located in the same room used for chemical storage or exposed to chemical fumes or vapors.

603.6 Gas Leak Detection. Equipment rooms containing chemicals or chemical feed equipment shall be provided with approved gas detectors or sensors that will actuate an alarm at a setpoint not more than the corresponding Occupational Exposure Limit (OEL). Ozone gas monitors shall comply with Section 603.6.1.

603.6.1 Ozone. An ambient ozone gas monitor, that will actuate an alarm when the ozone concentration is equal to or exceeds 0.1 ppm, shall be installed in an enclosed room or space containing ozone generating equipment. The gas monitor shall be located not less than 18 inches (457 mm) and not more than 24 inches (610 mm) above the floor. Upon activation of the alarm, the ozone system shall be automatically be shut off.

Substantiation:

Although cross-referencing Section 603.0 (Equipment Rooms or Enclosures) provides general requirements, including ventilation requirements for equipment rooms, gas chlorinators require additional safeguards due to the unique hazards associated with pressurized chlorine gas. For this reason, the additional text of "in a separate well-ventilated room" is being added. Chlorine gas is a toxic inhalation hazard, and even minor leaks can create dangerous conditions for personnel and occupants. Locating gas chlorinators in a separate, dedicated, and well-ventilated room helps isolate chlorine gas from incompatible chemicals, protects adjacent equipment, and ensures ventilation systems can be designed specifically to control and exhaust chlorine gas.

These added specification reduces the risk of accidental mixing with other chemicals, prevent corrosion of nearby equipment, and provide safer emergency response conditions. Because these risks are not adequately addressed by general equipment-room language alone, retaining specific requirements for a separate, well-ventilated room is necessary to maintain an appropriate level of safety.

Item #:

041

Code Number:

2024 USPSHTC

Section Number:

507.2.1

SUBMITTER:

Mark Hamilton

Organization Name:

Self

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

507.0 Chemical Feed Equipment.

507.2 Gas Chlorinators. (remaining text unchanged)

507.2.1 Storage. Chlorine cylinders, including empty cylinders, shall be stored in a well-ventilated, dry, and cool area, away from heat sources, and protected from direct sunlight. Cylinders shall be secured in an upright position. Valve caps shall be installed when not in use.

SUBSTANTIATION:

The section on storage for chlorine cylinders is being update to add safety requirement. Whether the tank is full or empty, they should be handled with precaution and protected from heat sources. Additionally, the valve caps should always be installed when the tanks are not in use.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

8

NEGATIVE:

2

ABSTAIN:

1

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

OSINSKI: Section 507.2.1 (Storage): There is not enough detail. This needs additional wording. See below for proposed wording:

- Cylinders shall be stored indoors, at or above ground level, in a separate, well-ventilated room. The storage room exhaust fan shall draw from floor level and be capable of providing at least 60 air exchanges per hour. Cylinders shall be individually chained or bolted to the wall in an upright position and in compliance with earthquake zone requirements.
- Audio and visual alarms shall be installed to warn of a leak.
- U.S. Bureau of Mines (USBM) or National Institute for Occupational Safety (NIOSH) approved gas mask and fresh canister (dated), or self contained breathing apparatus (SCBA) shall be provided, worn while exchanging tanks, and stored immediately outside of the chlorine storage room.
- Only individuals trained, having completed refresher training every 6 months, and if required by the AHJ, licensed in proper procedures shall be permitted to handle gas chlorine equipment.
- Valve caps shall be installed on spare tanks or when not in use. Gaskets must be replaced when changing tanks to help avoid leaks. A wrench shall be provided on the stem to shut off the valve if a leak develops. Cylinder exchanges may only occur when the pool is closed to the public.

ROBERTS: I agree with the comments by Alison Osinski.

EXPLANATION OF ABSTAIN:

CASE: See my comments on Item #040.

Comment 1

Item #:

041

Code Number:

2024 USPSHTC

Sections(s):

507.2.1

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

507.0 Chemical Feed Equipment.

507.2 Gas Chlorinators. Chlorine and chlorinating equipment shall be located in an equipment room in accordance with Section 602.0 that is located at or above ground level and does not contain other chemical feeding equipment. Electric motor operated chlorinators shall comply with UL 1081 and be installed in accordance with the manufacturer's installation instructions.

507.2.1 Storage. Chlorine cylinders, including empty cylinders, shall be stored in a well-ventilated, dry, and cool area, away from heat sources, and protected from direct sunlight. Cylinders shall be secured **individually** in an upright position. Valve caps shall be installed when not in use.

Substantiation:

Chlorine gas cylinders must be individually secured to prevent them from tipping, falling, or striking one another. Each cylinder contains pressurized chlorine gas, and even a small impact can damage the valve and cause a dangerous release. Securing cylinders one by one ensures that if one cylinder shifts or is being replaced, it does not affect the stability of the others. This reduces the risk of leaks, injuries, and emergency situations.

Item #:

066

Code Number:

2024 USPSHTC

Section Number:

509.4.2 - 509.4.2.5, Table 1001.1

SUBMITTER:

Amelia Stewart

Organization Name:

Self

Organization Representation:

RECOMMENDATION:

Revise text

Proposed Text :

509.0 Secondary Disinfection Systems.

509.5~~509.4.2~~ **Ozone Systems.** ~~When used, ozone system side-stream loop shall be installed in the recirculation system downstream of the filters and the water heating equipment, and upstream of the halogen feed location and pH chemical feed equipment.~~ Where installed, ozone systems shall be in accordance with Section 509.5.1 through Section 509.5.5.

509.5.1 Ozone Generators. Ozone generators shall comply with UL 1563. Ozone generators used to treat residential pools, spas and hot tubs shall also comply with IAPMO IGC 402, or other equivalent standards.

509.5.1.1 Location. Ozone generators shall be located in accordance the following:

- (1) In an equipment room provided with ventilation in accordance with Section 507.1.4,
- (2) In an approved cabinet provided with ventilation in accordance with the fire code, or
- (3) Outdoors where contained within an approved pressure vessel.

509.5.2~~509.4.2.2~~ **ORP Monitor/Controller**~~Oxidation Reduction Potential.~~ Ozone generating equipment shall be equipped with an approved oxidation reduction potential (ORP) monitor/controller. The ORP monitor/controller shall comply with the following:

- (1) Be independent from other ORP monitors/controllers managing halogen-based disinfectants; and
- (2) Be located downstream of the ozone side-stream loop and upstream of the halogen feed location and pH chemical feed equipment.

509.5.2.1 ORP Measurements. The ORP of the ozone system shall not be not less than 650 mV where measured after not more than 5 feet (mm) downstream of the ozone side-stream remixes into the recirculation system and upstream of the halogen feed location and pH chemical feed equipment.

509.5.2.2~~509.4.2.5~~ **Alarm Required.** ~~When the ORP reading for the ozone system drops below 650 mV, approved audible and visual alarms shall be installed to alert facility staff.~~ An approved audible and visual alarm shall be activated when the ORP measurement is less than 650 mV. The meaning of the alarm shall be clearly marked by signage near the annunciator.

509.5.3 Injection. The injection point shall be located in the return line, downstream of filtration and heating equipment, and upstream of disinfection chemical injection points.

509.5.3.1~~509.4.2.3~~ **Gas Leak Monitor/Controller.** An ambient ozone gas monitor/controller shall be installed in the equipment room where the ozone system is located adjacent to the ozone contact chamber. In the event of ozone leak detection, the monitor/controller shall automatically shut off the ozone system.

509.5.4~~509.4.2.1~~ **Ozone Removal.** The dissolved ozone concentration in the body of the pool shall not exceed 0.1 mg/L (0.1 ppm).

509.5.5~~509.4.2.4~~ **Interlocked.** The ozone system shall be interlocked electrically with the recirculation pump or automated feature supply valves.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
IAPMO IGC 402-2024	Residential Ozone Generators for Pools and Spas	Disinfection	509.5.1

(portions of table not shown remain unchanged)

Note: IAPMO IGC 402 and UL 1563 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.

SUBSTANTIATION:

The section on ozone systems has been updated and now includes standards for ozone generators. The ozone section is separated out to its own section (509.5 Ozone Systems). The updates and parameters correlate with other industry codes and standards. The code has been updated to be more comprehensive, and the titles better identify the content and intent of the sections and provisions.

You can review a read only verion of IAPMO IGC 402 at the following link:

<https://codes.iapmo.org/epubs/standards/IGC/IGC-402-24/>

Committee Action:

Accept As Amended by the TC

Proposed Text :

509.0 Secondary Disinfection Systems.

509.5 Ozone Systems. Where installed, ozone systems shall be in accordance with Section 509.5.1 through Section 509.5.5.

509.5.1 Ozone Generators. Ozone generators shall comply with UL 1563. Ozone generators used to treat residential pools, spas and hot tubs shall also comply with IAPMO IGC 402, or other equivalent standards.

509.5.1.1 Location. Ozone generators used to treat public pools, spas, and hot tubs shall be located in accordance the following:

- (1) In an equipment room provided with ventilation in accordance with Section 507.1.4,
- (2) In an approved cabinet provided with ventilation in accordance with the fire code, or
- (3) Outdoors where contained within an approved pressure vessel

509.5.2 ORP Monitor/Controller. Ozone generating equipment shall be equipped with an approved oxidation reduction potential (ORP) monitor/controller. The ORP monitor/controller shall comply with the following:

- (1) Be independent from other ORP monitors/controllers managing halogen-based disinfectants; and
- (2) Be located downstream of the ozone side-stream loop and upstream of the halogen feed location and pH chemical feed equipment.

509.5.2.1 ORP Measurements. The ORP of the ozone system shall not be less than 650 mV where measured not more than 5 feet (1524 mm) downstream of the ozone side-stream remixes into the recirculation system.

509.5.2.2 Alarm Required. An approved audible and visual alarm shall be activated when the ORP measurement is less than 650 mV. The meaning of the alarm shall be clearly marked by signage near the annunciator.

509.5.3 Injection. The injection point shall be located in the return line, downstream of filtration and heating equipment, and upstream of disinfection chemical injection points.

509.5.3.1 Gas Monitor/Controller. An ambient ozone gas monitor/controller shall be installed adjacent to the ozone contact chamber. In the event of ozone leak detection, the monitor/controller shall automatically shut off the ozone system.

509.5.4 Ozone Residual Removal. The dissolved ozone concentration in the body of the pool shall not exceed 0.1 mg/L (0.1 ppm).

509.5.5 Interlocked. The ozone system shall be interlocked electrically with the recirculation pump or automated feature supply valves.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
IAPMO IGC 402-2024	Residential Ozone Generators for Pools and Spas	Disinfection	509.5.1

(portions of table not shown remain unchanged)

Committee Statement:

Section 509.5.1.1 (Location) is being amended to clarify that the location requirements for ozone generators are only applicable to "public pools, spas, and hot tubs." An editorial revision is then being made to Section 509.5.2.1 (ORP Measurements) to include a missing conversion. Lastly, the title of Section 509.5.4 is being updated to "Ozone Residual," as ozone is not removed from the water; rather, it is the residual concentration that is measured.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

9

NEGATIVE:

2

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

HAMIL: I believe the following errors should be corrected:

- Section 509.5.1: UL 1563 is an ozone generator standard for small portable residential spas and is not likely to be found in commercial ozone applications. Other UL standards that ozone systems can be tested to are UL 979, UL 1081 and UL 508. I suggest we simply say "applicable UL Standard."
- Section 509.5.4: This one was missed. We have already changed the verbiage "ozone removal" to "ozone residual" in other places in the code.
- Section 509.5.1.1(3): For the item stating, "Outdoors where contained within an approved pressure vessel." This is only applicable with very large municipal pressurized ozone systems, and using it in this code makes no sense.

ROBERTS: I agree with the comments provided by Beth Hamil.

Comment 1

Item #: 066 **Code Number:** 2024 USPSHTC **Sections(s):** 510.5.1

Submitter Name: Arnold Rodio **Organization Name:** USPSHTC Code Change Review Task Group, Chair **Organization Representation:**

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

510.0 Secondary Treatment.

510.5 Ozone Systems. Where installed, ozone systems shall be in accordance with Section 510.5.1 through Section 510.5.5.

510.5.1 Ozone Generators. Ozone generators shall comply with the applicable electrical safety standards(s) such as UL 508, UL 979, UL 1081, and UL 1563. Ozone generators used to treat residential pools, spas and hot tubs shall ~~also~~ comply with IAPMO IGC 402, or other equivalent standards.

Substantiation:

Section 510.5.1 (Ozone Generators) contains UL 1563 which is an ozone generator standard for small portable residential spas and is not likely to be found in commercial ozone applications. Other UL standards that ozone systems can be tested to are UL 979, UL 1081 and UL 508. Additionally, the term “also” is being removed as the IGC standard can stand alone as it already references the applicable standards for residential applications.

Comment 2

Item #: 066 **Code Number:** 2024 USPSHTC **Sections(s):** 510.5.1.1

Submitter Name: Arnold Rodio **Organization Name:** USPSHTC Code Change Review Task Group, Chair **Organization Representation:**

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

510.0 Secondary Treatment.

510.5 Ozone Systems. (remaining text unchanged)

510.5.1 Ozone Generators. (remaining text unchanged)

510.5.1.1 Location. Ozone generators used to treat public pools, spas, and hot tubs shall be located in accordance the following:

(1) In an equipment room provided with ventilation in accordance with Section 507.1.4, **or**

(2) In an approved cabinet provided with ventilation in accordance with the fire code, **or**

~~(3) Outdoors where contained within an approved pressure vessel.~~

Substantiation:

Section 510.5.1.1 (Location), Note (3) pertains exclusively to large-scale municipal pressurized ozone generation systems and is not representative of the equipment configurations typically encountered in commercial or public aquatic facilities. Its inclusion within this code introduces ambiguity regarding applicability and may lead to misinterpretation of compliance requirements. Therefore, Note (3) is removed to eliminate unintended scope expansion and ensure technical clarity within the section.

Comment 3

Item #:

066

Code Number:

2024 USPSHTC

Sections(s):

510.5.2.1

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

510.0 Secondary Treatment.

510.5 Ozone Systems. (remaining text unchanged)

510.5.2 ORP Monitor/Controller. (text not shown remain unchanged)

510.5.2.1 ORP Measurements. The ORP of the ozone system shall ~~not~~ be less than 650 mV and measured not more than 5 feet (1524 mm) downstream of **where** the ozone side-stream remixes ~~into~~ **with** the recirculation system.

Substantiation:

The updated language removes redundant phrasing and improves precision by clearly defining both the required minimum ORP value (650 mV) and the standardized measurement location, thereby enhancing enforceability and ensuring consistent interpretation by designers, operators, and regulatory authorities.

Comment 4

Item #:
066

Code Number:
2024 USPSHTC

Sections(s):
510.5.2.3

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

510.0 Secondary Treatment.

510.5 Ozone Systems. (remaining text unchanged)

510.5.2 ORP Monitor/Controller. (remaining text unchanged)

510.5.2.3 Labeling of Ozone Gas Leak Detection Alarms. Alarms shall be labeled to identify such visual and audible alarms are for the ozone gas leak detection system.

Substantiation:

The addition of Section 510.5.2.3 (Labeling of Ozone Leak Detection Alarms) is necessary to establish clear identification requirements for alarm devices associated with ozone gas leak detection systems. Ozone is a highly reactive oxidizing gas with strict occupational exposure limits, and alarm systems are a critical safeguard for personnel entering or working near ozone generation equipment. However, without explicit labeling requirements, visual and audible alarm devices may be misinterpreted as belonging to unrelated building systems, such as fire alarms, equipment fault indicators, or general mechanical alarms, resulting in delayed or inappropriate emergency response.

Explicit labeling of ozone gas-detection alarms is essential for hazard communication, operational clarity, and maintaining consistency with broader industrial safety standards. Section 510.5.2.3 enhances the code's enforceability and ensures that personnel can correctly interpret and react to ozone-related alarm conditions in a timely and informed manner.

Comment 5

Item #:
066

Code Number:
2024 USPSHTC

Sections(s):
510.5.3.1

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

510.0 Secondary Treatment.

510.5 Ozone Systems. (remaining text unchanged)

510.5.3 Injection. The injection point shall be located in the return line, downstream of filtration and heating equipment, and upstream of disinfection chemical injection points.

510.5.3.1 Gas Monitor/Controller. An ambient ozone gas monitor/controller shall be installed adjacent to the ozone contact chamber. In the event of ozone leak detection, the monitor/controller shall automatically shut off the ozone system.

Substantiation:

This section was stricken by ROP Item #072. However, it was updated in the original Item #066. This comment brings the text back to complete the intended proposal as it is needed in this specific section for ozone.

Ozone is an effective disinfectant for aquatic facilities but presents a significant inhalation hazard at very low airborne concentrations. Regulatory agencies such as OSHA and NIOSH establish stringent exposure limits due to ozone’s ability to cause respiratory irritation, pulmonary injury, and other systemic effects, often without reliable odor warning. Because ozone is generated on-site and can rapidly accumulate in enclosed equipment rooms, continuous ambient monitoring is necessary to protect operators, maintenance personnel, and emergency responders. Installing a gas monitor adjacent to the ozone contact chamber targets the most likely release location, allowing for rapid detection and timely hazard mitigation.

Requiring the ozone gas monitor/controller to automatically shut down the ozone system upon leak detection provides a critical fail safe engineering control. Automatic shutdown reduces dependence on human response during emergencies, limits the magnitude and duration of a release, and prevents continued ozone generation under unsafe conditions. This approach aligns with established hierarchy of controls principles, existing model codes, and industry best practices, which emphasize engineered safeguards to manage toxic gas risks. The provision improves life safety, enhances enforceability, and ensures consistent protection across aquatic facilities utilizing ozone disinfection systems.

Comment 6

Item #:
066

Code Number:
2024 USPSHTC

Sections(s):
217.0

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

217.0 -O-

Ozone. Activated oxygen (O₃). A gaseous disinfectant-oxidant (generated on-site by an ozone producing ultraviolet (185 nm) light, plasma, or corona discharge methods) ~~used in combination with a disinfectant that produces a residual in the water.~~

Substantiation:

The definition is being updated to accurately reflect the methods used to generate ozone, including ultraviolet light at 185 nm, plasma, and corona discharge technologies. Additionally, ozone is not always used in conjunction with a residual disinfectant; therefore, the previous phrase implying such dependency is being removed to prevent confusion and ensure alignment with current industry practice.

Item #:

074

Code Number:

2024 USPSHTC

Section Number:

803.3

SUBMITTER:

Beth Hamil

Organization Name:USPSHTC Private vs. Public Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Revise text

Proposed Text :**803.0 Barrier Requirements.**

(Section 803.1 and Section 803.2 shown for information purposes)

803.1 General. An outdoor swimming pool (including an inground, aboveground, or onground pool), spa, or hot tub shall be provided with a barrier in accordance with Section 803.2 through Section 803.7 and enclosed on all sides.

803.2 Barrier Location. Barriers shall be not less than 48 inches (1219 mm) above a permanent object that is within 48 inches (1219 mm) of the outside of the barrier. Measurement shall be taken perpendicular from the height of the barrier.

803.3 Barrier Height. The top of the barrier shall be not less than ~~48~~60 inches (~~1219~~1254 mm) or as required by the Authority Having Jurisdiction, but in no case less than 48 inches (1219 mm) above grade measured on the side of the barrier that faces away from the swimming pool, spa, or hot tub. The maximum vertical clearance between grade and the bottom of the barrier shall not exceed 4 inches (102 mm) measured on the side of the barrier that faces away from the swimming pool, spa, or hot tub. Where the top of the pool, spa, or hot tub structure is above grade, the barrier shall be permitted to be at ground level or mounted on top of the pool structure only where permitted by the manufacturer. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the structure and the bottom of the barrier shall not exceed ~~42~~ inches (~~102~~51 mm) or as required by the Authority Having Jurisdiction, but in no case greater than 4 inches (102 mm).

SUBSTANTIATION:

Most jurisdictions have a minimum barrier height requirement of 60 inches. This change will require the more stringent height requirement, however it will permit no less than 48 inches where permitted by the local authority. There have been many studies showings that children are able to pass their heads or bodies through a 4 inch space and either got stuck or make it through. This is an important safety parameter which will still allow the 4 inches if the local codes permit such spacing.

Committee Action:

Reject

Committee Statement:

The provided substantiation lacks technical justification to support the proposed barrier heights. Moreover, the committee supports retaining the existing 48-inch minimum height, as it aligns with research data and established industry standards.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

7

NEGATIVE:

4

ABSTAIN:

0

NOT RETURNED:

0

Failed Ballot Disclaimer:

Note: Item # 074 failed to achieve the necessary two-thirds affirmative vote of returned ballots. In accordance with Section 6.8.2 of the Regulations Governing Consensus Development of the USHGC and USPSHTC, a public comment is requested for this proposal. The Technical Committee will reconsider this proposal as a public comment.

EXPLANATION OF NEGATIVE:

LACO: Conflicting language exists within the text that allows for exceptions.

OSINSKI: A barrier height of 48 inches is too low and will not keep anyone other than a toddler out of the pool. The vertical clearance between the bottom of the barrier and the ground shall not exceed 2 inches unless the ground is covered in concrete.

RODIO: The vertical clearance between the bottom of the barrier and the ground shall not exceed 2 inches unless the ground is covered in concrete. Conflicting language exists within the text that allows for exceptions. The barrier height the industry has accepted is 48 inches, which is standard with the self-closing and self-latching device at 54 inches for each entry gate.

WAY: The barrier height the industry has accepted is 48 inches, which is standard with the self-closing and self-latching device at 54 inches for each entry gate.

EXPLANATION OF AFFIRMATIVE:

CASE: The current 48 inch height referenced in the substantiation only accounts for reducing access by small children. A healthy teen or adult can easily climb over a 48 inch barrier height. Children under 15 years old only accounts for 20 percent of drownings globally. Moving to a 60 inch barrier height increases the effort made by a healthy teen or adult to climb over it, and therefore reduces the drowning risk.

PRYSTUPA: The barrier height the industry has accepted is 48 inches as a standard with a self-closing or self-latching device at 54 inches for each entry gate.

Comment 1**Item #:**

074

Code Number:

2024 USPSHTC

Sections(s):

803.3

Submitter Name:

Arnold Rodio

Organization Name:USPSHTC Code Change Review
Task Group, Chair**Organization Representation:****Recommendation:**

Accept the Code Change Proposal as Submitted

Proposed Text:

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

Substantiation:

The proposed change aligns the barrier height requirement with the most widely adopted minimum standard of 60 inches, which is required by many state and local jurisdictions for residential and public aquatic facilities. Increasing the baseline height improves protection against unintended child access, while still allowing the Authority Having Jurisdiction (AHJ) to approve a lower height—but never less than 48 inches—to ensure flexibility where local codes differ. Additionally, the clarification regarding the maximum 4 inch vertical clearance maintains consistency with long established safety principles. Numerous child safety studies and incident reports have demonstrated that openings of 4 inches or greater may allow small children to insert their heads or bodies, creating a risk of entrapment or unauthorized access. Retaining this maximum spacing threshold preserves a critical safeguard and aligns with nationally recognized pool barrier and building safety criteria. Overall, this update improves technical accuracy, harmonizes the code with prevailing jurisdictional practices, and enhances the protective function of pool, spa, and hot tub barriers while preserving reasonable flexibility for the AHJ.

Item #:

081

Code Number:

2024 USPSHTC

Section Number:

218.0, 907.7, 908.17

SUBMITTER:

Kenneth Gregory

Organization Name:USPSHTC New and Existing Aquatic
Venue Types Task Group, Chair**Organization Representation:****RECOMMENDATION:**

Revise text

Proposed Text :

907.0 Wave Pools.

907.7 Stationary Wave ~~System Pools~~. Stationary wave ~~system pools~~ shall comply with ASTM F3133.

908.0 Interactive Water Play Venues.

908.17 Surf Pools ~~and Wave Pools~~. ~~Artificial s~~Surf pools, ~~surf venues~~, and wave pools shall be designed and maintained in accordance with the ~~manufacturer's instructions~~ registered design professional and shall comply with the local health and safety regulations.

218.0 - P -

Pool. For the purposes of this code, pool types are defined as follows:

(all definitions under pool are shown for information)

Landing Pool. A designated area designed to generate waves that simulate conditions suitable for surfing activities. Surf pools are intended for sports activities and not general play. Also known as surf lagoon or surf basin. ~~of the pool located at the terminus point of an open or closed flume, or similar structure. Also known as catch pool or splash pool.~~

Spa Pool. A pool, not under medical supervision that incorporates water jets, aeration system, or both used for hydromassage.

Surf Pool. A pool in which ocean waves are simulated for the purpose of surfing or other similar activities. These venues typically have large mechanisms that generate a lot of water movement. Waves are of a size that can generate surfing conditions.

~~Surf Venue. Stationary systems capable of producing waves for surfing.~~

Swimming Pool. A constructed or prefabricated pool used for swimming or bathing, exceeding 18 inches (457 mm) in depth.

Swimming Pool (Private). A constructed or prefabricated pool that is used as a swimming pool in connection with a single-family residence, duplex, or triplex, and is available only to the family of the householder and their invited guests at no charge.

Swimming Pool (Public). A constructed or prefabricated pool other than a private or residential swimming pool.

Therapy Pool. A pool of water that is specifically designed for physical therapy or rehabilitation purposes.

Wading Pool. A constructed or prefabricated pool used for wading that is 18 inches (457 mm) or less in depth.

Wave Pool. A pool designed to generate waves which simulate breaking or cyclic waves intended for general play. Also known as a standing wave systems or sheet wave systems. ~~in which waves are generated in an assortment of patterns. Waves are of a size that can generate surfing conditions.~~

SUBSTANTIATION:

Surf pools and waves pools are not designed for the same or similar intended use. Surf pools are exclusively used for sporting activities using boards to ride waves. Wave pools on the other hand are intended exclusively for play activities and do not involve use of boards or wave surfing.

ASTM F3133 considers wave pools, stationary wave pools, standing wave systems, and sheet wave systems as interchangeable references. Additionally, all wave pools are stationary. Regardless of whether the wave pool is prefabricated in modular sections or constructed entirely onsite, these pools are considered stationary systems.

Committee Action:

Accept As Amended by the TC

Proposed Text :

907.0 Wave Pools.

907.7 Stationary Wave System. Stationary wave system shall comply with ASTM F3133.

908.0 Interactive Water Play Venues.

908.17 Surf Pools and Wave Pools. Surf pools, and wave pools shall be designed and maintained in accordance with the registered design professional and shall comply with the local health and safety regulations.

218.0 - P -

Pool. For the purposes of this code, pool types are defined as follows:

Landing Pool. A designated area ~~designed to generate waves that simulate conditions suitable for surfing activities of the pool located at the terminus point of an open or closed flume, or similar structure.~~ Surf pools are intended for sports activities and not general play. Also known as surf lagoon or surf basin catch pool or splash pool.

Spa Pool. A pool, not under medical supervision that incorporates water jets, aeration system, or both used for hydromassage.

Surf Pool. A pool ~~in which ocean waves are simulated for the purpose of surfing or other similar activities. These venues typically have large mechanisms that generate a lot of water movement~~ designed to generate waves that simulate conditions suitable for surfing activities. Surf pools are intended for sports activities and not general play. ~~Waves are of a size that can generate surfing conditions.~~ Also known as surf lagoon or surf basin.

Swimming Pool. A constructed or prefabricated pool used for swimming or bathing, exceeding 18 inches (457 mm) in depth.

Swimming Pool (Private). A constructed or prefabricated pool that is used as a swimming pool in connection with a single-family residence, duplex, or triplex, and is available only to the family of the householder and their invited guests at no charge.

Swimming Pool (Public). A constructed or prefabricated pool other than a private or residential swimming pool.

Therapy Pool. A pool of water that is specifically designed for physical therapy or rehabilitation purposes.

Wading Pool. A constructed or prefabricated pool used for wading that is 18 inches (457 mm) or less in depth.

Wave Pool. A pool designed to generate waves which simulate breaking or cyclic waves intended for general play. Also known as a standing wave systems or sheet wave systems.

Committee Statement:

Item #081 is being amended to correct an oversight in the submission of the proposal which incorrectly revised the definition for "landing pool" instead of "surf pool." The amendment retains the original definition for "landing pool" and incorporates the intended revisions to the definition for "surf pool."

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

10

NEGATIVE:

1

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF NEGATIVE:

HAMIL: The definition for "landing pool" is incorrect.

Comment 1

Item #:

081

Code Number:

2024 USPSHTC

Sections(s):

218.0

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

218.0 - P -

218.0 Surf Pool. A pool purpose designed aquatic venue engineered to mechanically generate controlled waves forms that simulate surfable conditions suitable for surfing activities. ~~Surf pools are intended for sports activities and not general play~~ Surf pools utilize wave generation systems, wave shaping bathymetry, and controlled flow dynamics to produce surf-quality waves of sufficient height, energy, and periodicity for athletic use. Also known as surf lagoon or surf basin.

Substantiation:

The proposed updates to the Surf Pool definition is intended to clearly distinguish these specialized aquatic venues from wave pools and other recreational water features by accurately describing their unique engineering, function, and intended use. Surf pools are purpose-designed systems that mechanically generate controlled, repeatable wave forms suitable for board-based surfing activities. Unlike general-play wave pools, surf pools rely on integrated wave-generation mechanisms, engineered bathymetry, and controlled flow dynamics to consistently produce surf-quality waves with sufficient height, energy, and periodicity for athletic use. Clarifying these characteristics improves technical accuracy, aligns terminology with current industry practices, and ensures that designers, regulators, and operators have a common understanding of what constitutes a surf pool.

This definition also supports proper code application by explicitly stating that surf pools are intended for sports activities and not general play, reducing confusion with venues designed for passive or recreational use. Surf pools present different operational, safety, and performance considerations than traditional wave pools, including higher energy waves, specialized user equipment, and controlled participant access. By formally defining Surf Pool and recognizing commonly used alternate terms such as surf lagoon or surf basin, the code provides greater clarity, improves enforceability, and helps ensure that appropriate design, safety, and regulatory provisions are consistently applied to these venues.

Comment 2

Item #:

081

Code Number:

2024 USPSHTC

Sections(s):

218.0

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

218.0 - P -

Wave Pool. A purpose-designed swimming pool ~~designed to~~ in which mechanically generate waves actions produce rhythmic, ~~which simulate~~ breaking, or cyclic waves patterns intended for general recreational play. Wave pools utilize engineered wave-generation systems to create controlled water motion and are not intended for board-based surfing or competitive athletic use. Also known as ~~a~~ standing wave systems or sheet wave systems.

Substantiation:

The added language clarifies the technical intent and functional limitations of wave pools by explicitly identifying their design purpose and operational scope. Wave pools are engineered to produce controlled water motion through mechanical wave-generation systems that create rhythmic, breaking, or cyclic waves suitable for general recreational play. These systems are designed around predictable hydraulic performance, lower wave energy, and broad user accessibility, which differentiates wave pools from surf pools and other specialized aquatic venues. Clearly stating these characteristics improves technical accuracy and ensures consistent interpretation among designers, operators, and Authorities Having Jurisdiction (AHJs).

This clarification also supports safe and enforceable code application by distinguishing wave pools from venues intended for board-based surfing or competitive athletic activities. Surfing and athletic venues typically involve higher-energy waves, specialized equipment, and controlled user participation, all of which introduce different design, operational, and safety considerations. By affirming that wave pools are not intended for board-based surfing or competitive use, the definition reduces ambiguity, prevents unintended cross-application of requirements, and helps ensure that appropriate safety, design, and operational standards are applied to each distinct type of aquatic venue.

Item #:

085

Code Number:

2024 USPSHTC

Section Number:

908.11

SUBMITTER:

Samantha Liu

Organization Name:

Self

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

908.0 Interactive Water Play Venues.

908.11 Spray Nozzle and Water Feature Water Disinfection. The water supply to the spray nozzles and water features shall be supplied from the water collection and treatment tank that is sanitized and filtered. When a separate feature pump is installed, those pumps shall have an electrical inter-lock that will prevent operation of the feature pump when the filtration pump is not operating.

Where nozzles are installed for water play features and spray grounds shall be installed flush with the surface being installed. The nozzle orifice where the nozzle is installed shall be not less than ½ inch (12.7 mm) in diameter to permit a removal tool to access the nozzle. The water velocity from the nozzle shall not exceed 20 feet per second (ft/s) (6.1 m/s).

SUBSTANTIATION:

The water velocity is a crucial factor in ensuring the safety and enjoyment of water play features. Limiting the nozzle velocity helps prevent injuries and ensures a more pleasurable experience for users. These values and velocities will correlate with other recognized standards.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF AFFIRMATIVE:

PRYSTUPA: The velocity standard does not necessarily apply to a splash pad when the nozzles put out a burst of water in a rotation pattern. Only when a nozzle has a steady flow would the flow rate standard apply.

Comment 1**Item #:**

085

Code Number:

2024 USPSHTC

Sections(s):

908.1.10

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

908.0 Aquatic Venues.**908.1 General Interactive Water Play Venues.** (remaining text unchanged)

908.1.10 Spray Nozzle and Water Feature Water Disinfection. The water supply to the spray nozzles and water features shall be supplied from the water collection and treatment tank that is sanitized and filtered. When a separate feature pump is installed, those pumps shall have an electrical inter-lock that will prevent operation of the feature pump when the filtration pump is not operating.

~~Where nozzles are installed for water play features and spray grounds shall be installed flush with the surface being installed. The nozzle orifice where the nozzle is installed shall be not less than ½ inch (12.7 mm) in diameter to permit a removal tool to access the nozzle. The water velocity from the nozzle shall not exceed 20 feet per second (ft/s) (6.1 m/s).~~

(shown informational purposes only)

908.1.13.1 Nozzles. The nozzle velocity of an interactive water play venue shall not exceed 20 feet per second (ft/s) (6.1 m/s). Nozzles shall be flush to the splash zone surface. The nozzle orifice shall not be larger than ½ inch (15 mm) in diameter . Nozzles not installed on the walking surface shall be designed to be visible to patrons using the interactive water play feature.

Substantiation:

The the second paragraph in Section 908.1.10 (Spray Nozzle and Water Feature Water Disinfection) is being stricken as it is repetitive to text that is already in existing Section 908.1.13.1(Nozzles). For this reason, it seems duplicative and is being recommended to be removed.

Comment 2**Item #:**

085

Code Number:

2024 USPSHTC

Sections(s):

908.1.10.1

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

908.0 Aquatic Venues.

908.1 General Interactive Water Play Venues. (remaining text unchanged)

908.1.10 Spray Nozzle and Water Feature Water Disinfection. The water supply to the spray nozzles and water features shall be supplied from the water collection and treatment tank that is sanitized and filtered. When a separate feature pump is installed, those pumps shall have an electrical inter-lock that will prevent operation of the feature pump when the filtration pump is not operating.

Where nozzles are installed for water play features and spray grounds shall be installed flush with the surface being installed. The nozzle orifice where the nozzle is installed shall be not less than ½ inch (12.7 mm) in diameter to permit a removal tool to access the nozzle. The water velocity from the nozzle shall not exceed 20 feet per second (ft/s) (6.1 m/s).

908.1.10.1 Mist Producing Nozzles. All foggers and jet nozzle sprays that produce finely atomized mists shall be connected to a separate potable water source.

Substantiation:

Mist-producing nozzles and fogging devices generate finely atomized water droplets that can remain suspended in air and be readily inhaled or deposited on skin, eyes, and mucous membranes. When these devices are supplied from recirculated or treated feature water, there is an increased public-health risk because fine aerosols can act as an efficient transport mechanism for microorganisms, including bacteria and opportunistic pathogens.

Recirculated water systems are designed for contact exposure (splashing, incidental ingestion), not aerosol inhalation, and treatment parameters such as disinfectant residuals, filtration, and turnover rates may not adequately control risks associated with inhalation of ultra-fine mists. Requiring mist-producing nozzles to be connected to a separate potable water source ensures that the aerosolized water meets drinking-water quality standards, significantly reducing the risk of respiratory exposure to pathogens and improving overall user safety.

In addition, supplying mist and fogging nozzles from a dedicated potable water source improves system reliability, maintainability, and code enforceability. Potable water systems are regulated, monitored, and maintained under established plumbing and public-health standards, providing consistent water quality independent of the operational variability of recirculating aquatic features. This separation prevents unintended cross-connections, disinfectant compatibility issues, and fluctuations in water chemistry that can adversely affect misting performance or create corrosion and clogging of fine orifices. By clearly distinguishing mist-producing devices from recirculated feature water, the provision establishes a clear, enforceable requirement that aligns with risk-based design principles, protects public health, and supports consistent application by designers, operators, and Authorities Having Jurisdiction.

Comment 3

Item #:

085

Code Number:

2024 USPSHTC

Sections(s):

908.1.14

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

908.0 Aquatic Venues.**908.1 General Interactive Water Play Venues.** (remaining text unchanged)

908.1.14 Design Pressure and Flow Rate. Aquatic play components that rely on specific water pressure(s), water flow rate(s) (gpm)(L/s), or both for safe and intended operation shall not be made available for public use until the the required performance criteria are verified. Verification shall be based on the component manufacturer's specifications or other approved performance criteria.

Substantiation:

Aquatic play components are engineered to operate within defined water pressure and flow rate ranges to achieve their intended hydraulic performance and to maintain user safety. Deviations from manufacturer-specified pressure or flow conditions can result in unsafe operating characteristics, including excessive jet velocity, unpredictable spray patterns, loss of feature stability, or insufficient water delivery to maintain hygienic conditions. Components such as spray nozzles, tipping elements, rotating features, and water curtains rely on calibrated hydraulic inputs to control force, trajectory, and timing. Verifying that required pressure and flow criteria are met prior to public use ensures that these components perform as designed and do not introduce impact, entrapment, slip, or fall hazards associated with over-pressurization or under-supply.

This provision establishes an enforceable point of responsibility at the time a feature is placed into service by requiring operator confirmation of performance conditions against manufacturer specifications or other approved criteria. The requirement is intentionally performance-based rather than prescriptive, allowing flexibility for varying feature designs while ensuring objective verification. By tying verification to documented specifications, the section supports consistent application by designers, operators, and Authorities Having Jurisdiction, and aligns with risk-based safety principles used throughout aquatic standards. This approach reduces reliance on visual assessment alone, improves operational accountability following maintenance or system adjustments, and helps ensure that aquatic play features are not made available to the public until safe and intended hydraulic operation is confirmed.

Item #:

092

Code Number:

2024 USPSHTC

Section Number:

908.21

SUBMITTER:

Alison Osinski

Organization Name:

Aquatic Consulting Services

Organization Representation:**RECOMMENDATION:**

Add new text

Proposed Text :

908.0 Interactive Water Play Venues.

908.21 Jungle Floats. Jungle floats that are installed in an aquatic venue shall meet all the requirements of this code.

SUBSTANTIATION:

Jungle floats are a popular attraction in beach areas, lakes and other bodies of water. While these floats may be in bodies of waters that fall outside the scope of the USPSHTC, there are jungle floats that may be placed/installed as part of a public aquatic venue. There is no known single, universally recognized "standard" for a jungle float, as the term generally refers to a large, inflatable floating water park with various features like slides, trampolines, and climbing obstacles, which can vary greatly in design and size depending on the manufacturer and location; however, most jungle floats do prioritize safety features like life jackets, designated swimming areas, and on-site lifeguards, while offering a range of activities for varied skill levels. For permanent installations as part of a water park or aquatic facility, the parts of the float should be in accordance with the minimum safety requirements of the USPSHTC.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

092

Code Number:

2024 USPSHTC

Sections(s):

908.8

Submitter Name:

Mark Hamilton

Organization Name:

Self

Organization Representation:**Recommendation:**

Reject the Code Change Proposal

Proposed Text:

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

Substantiation:

The term “jungle floats” is being recommended for removal by the public comment because it is undefined within the USPSHTC and lacks any established criteria, performance requirements, or recognized industry standards that would allow for consistent interpretation or enforcement. Without a clear definition or scope, the provision creates ambiguity for designers, operators, manufacturers, and Authorities Having Jurisdiction (AHJs).

Additionally, the USPSHTC already regulates aquatic play features, floating structures, and interactive water elements under other sections that provide specific safety, design, and operational requirements. Introducing an undefined term that is not addressed elsewhere in the code could result in inconsistent application or misinterpretation of the code’s intent.

Removing this text eliminates ambiguity, prevents inadvertent regulatory gaps, and ensures that any floating or interactive play elements continue to be evaluated under the appropriate existing sections of the code until a formal, technically supported definition and set of requirements can be developed in a future code cycle.

Item #:

094

Code Number:

2024 USPSHTC

Section Number:

Appendix D, Table 1001.2

SUBMITTER:

William Cahn

Organization Name:

Self

Organization Representation:**RECOMMENDATION:**

Add new text

Proposed Text :**APPENDIX D****PROFESSIONAL QUALIFICATIONS****D 101.0 General.**

D 101.1 Scope. The provisions of this appendix address minimum qualifications for installers, inspectors, or employers for systems covered within the scope of this code.

D 102.0 Qualifications.

D 102.1 General. Where permits are required, the Authority Having Jurisdiction shall have the authority to require contractors, installers, or service technicians to demonstrate competency. Where determined by the Authority Having Jurisdiction, the contractor or technicians shall be licensed or certified to perform such work. Professional qualifications shall be required for an individual to demonstrate the required level of competency.

D 102.2 Inspectors and Plans Examiners. Professional qualifications for plumbing inspectors and plumbing plans examiners shall be qualified in accordance with ASSE/IAPMO/ANSI Series 16000.

D 102.2.1 Qualification for Plumbing Inspector. Professional qualifications for plumbing inspectors shall be in accordance with ASSE/IAPMO/ANSI 16010.

D 102.2.2 Qualification for Plumbing Plan Examiner. Professional qualifications for plumbing plans examiners shall be in accordance with ASSE/IAPMO/ANSI 16040.

D 102.3 Service Plumber Technician. Professional qualifications for plumbing service technicians shall be qualified to ASSE/IAPMO/ANSI Series 13000.

D 102.3.1 Qualification for Service Plumbers. Professional qualifications for service plumbers shall be in accordance ASSE/IAPMO/ANSI 13010.

D 102.4 Cross-Connection Control. Professional qualifications for cross-connection control professionals shall be in accordance with ASSE/IAPMO/ANSI Series 5000.

D 102.4.1 Qualification for Backflow Testers. Professional qualifications for backflow assembly testers shall be in accordance with ASSE/IAPMO/ANSI 5110.

D 102.4.2 Qualification for Surveyors. Professional qualifications for cross-connection assembly surveyors shall be qualified in accordance with ASSE/IAPMO/ANSI 5120.

D 102.4.3 Qualification for Repairers. Professional qualifications for backflow prevention assembly repairers shall be in accordance with ASSE/IAPMO/ANSI 5130.

D 102.4.4 Qualification for Fire Protection Systems. Professional qualifications for backflow assembly testers of fire protection systems shall be in accordance with ASSE/IAPMO/ANSI 5140.

D 102.4.5 Qualification for Program Administrator. Professional qualifications for backflow prevention administrator shall be in accordance with ASSE/IAPMO/ANSI 5150.

D 102.5 Water Management and Infection Control Risk Assessment for Building Systems. Professional qualifications for construction and maintenance personnel and employers to identify and manage potentially hazardous exposure to bloodborne, waterborne and airborne pathogens. Also includes qualifications for members of a water safety team involved in the development of a risk assessment analysis, and water management and sampling plan, for protection from Legionella and other waterborne pathogens and persons who conduct a facility risk assessment and implement a water safety and management program to reduce the risk of infections due to Legionella. Qualifications are in accordance with ASSE/IAPMO/ANSI Series 12000.

D 102.5.1 Environment of Care, Infection Control and Construction Risk Assessment Professional Qualification Standard. Professional qualifications for general knowledge of the environment of care, infection control and construction risk assessment procedures to protect facility operations, occupants, workers or any individual who has the potential for harm caused by construction activities shall be in accordance with ASSE/IAPMO/ANSI 12010.

D 102.5.2 Environment of Care, Infection Control and Construction Risk Assessment Professional Qualification Standard for Construction and Maintenance Employers. Professional qualifications for general knowledge of the environment of care, infection control and construction risk assessment requirements and procedures to protect facility operations, occupants, workers, or any individual who has the potential for harm caused by construction activities shall be in accordance with ASSE/IAPMO/ANSI 12020. It also provides general knowledge of employer responsibilities to the worker and to the facility.

D 102.5.3 Water Quality Program Professional Qualifications Standard for Employers and Designated Representatives. Professional qualifications for employers and designated representatives implementing water quality programs shall be in accordance with ASSE/IAPMO/ANSI 12060.

D 102.5.4 Qualification for Water Quality Program, Plumbers. Professional qualifications for plumbers implementing a water quality program shall be in accordance with ASSE/IAPMO/ANSI 12061.

D 102.5.5 Qualification for Water Quality Program and Pipefitters. Professional qualifications for pipefitters implementing a water quality program shall be in accordance with ASSE/IAPMO/ANSI 12062.

D 102.5.6 Qualification for Water Quality Program, Sprinkler Fitters. Professional qualifications for sprinkler fitters implementing a water quality program shall be in accordance with ASSE/IAPMO/ANSI 12063.

D 102.5.7 Legionella Water Safety and Management Specialist. Professional qualifications for persons who conduct a facility risk assessment and implement a water safety and management program to reduce the risk of infections due to Legionella shall be in accordance with ASSE/IAPMO/ANSI 12080.

Table 1001.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ASSE/IAPMO/ANSI Series 5000-2022e1	Cross-Connection Control Professional Qualifications Standard	Professional Qualifications
ASSE/IAPMO/ANSI 5110-2022e1	Backflow Prevention Assembly Testers	Professional Qualifications
ASSE/IAPMO/ANSI 5120-2022e1	Cross-Connection Control Surveyors	Professional Qualifications
ASSE/IAPMO/ANSI 5130-2022e1	Backflow Prevention Assembly Repairers	Professional Qualifications
ASSE/IAPMO/ANSI 5140-2022e1	Fire Protection System Cross-Connection Control Tester	Professional Qualifications
ASSE/IAPMO/ANSI 5150-2022e1	Backflow Prevention Program Administrators	Professional Qualifications

ASSE/IAPMO/ANSI Series 12000-2024	Professional Qualifications Standard for Water Management and Infection Control Risk Assessment for Building Systems	Professional Qualifications
ASSE/IAPMO/ANSI 12010-2024	Environment of Care, Infection Control and Construction Risk Assessment Professional Qualification Standard	Professional Qualifications
ASSE/IAPMO/ANSI 12020-2024	Environment of Care, Infection Control and Construction Risk Assessment Professional Qualification Standard for Construction and Maintenance Employers	Professional Qualifications
ASSE/IAPMO/ANSI 12060-2024	Water Quality Program Professional Qualifications Standard for Employers and Designated Representatives	Professional Qualifications
ASSE/IAPMO/ANSI 12061-2024	Water Quality Program Professional Qualifications Standard for Plumbers	Professional Qualifications
ASSE/IAPMO/ANSI 12062-2024	Water Quality Program Professional Qualifications Standard for Pipefitters and HVAC Technicians	Professional Qualifications
ASSE/IAPMO/ANSI 12063-2024	Water Quality Program Professional Qualifications Standard for Sprinkler Fitters	Professional Qualifications
ASSE/IAPMO/ANSI 12080-2024	Professional Qualifications Standard for Legionella Water Safety and Management Specialist	Professional Qualifications
ASSE/IAPMO/ANSI Series 13000-2015 (R2020)	Service Plumber and Residential Mechanical Service Technician Professional Qualifications Standard	Professional Qualifications
ASSE/IAPMO/ANSI 13010-2015 (R2020)	Professional Qualifications Standard for the Service Plumber	Professional Qualifications
ASSE/IAPMO/ANSI Series 16000-2019 (R2025)	Professional Qualifications Standard for Inspectors and Plans Examiners	Professional Qualifications
ASSE/IAPMO/ANSI 16010-2019 (R2025)	Plumbing Inspector	Professional Qualifications
ASSE/IAPMO/ANSI 16040-2019 (R2025)	Plumbing Plan Examiner	Professional Qualifications

(portions of table not shown remain unchanged)

SUBSTANTIATION:

A new appendix is being proposed which provides minimum qualifications for installers, inspectors, or employers for systems covered within the scope of this code. These professional qualifications serve as a baseline for determining competency.

The links to the read only versions of the standards are as follows for your review: [ASSE/IAPMO/ANSI Series 5000](#), [ASSE/IAPMO/ANSI Series 12000](#), [ASSE/IAPMO/ANSI Series 13000](#), [ASSE/IAPMO/ANSI Series 16000](#)

Committee Action:

Reject

Committee Statement:

The proposed appendix is limiting and puts unnecessary burdens on installers and inspectors.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

EXPLANATION OF AFFIRMATIVE:

PRYSTUPA: This is more an operating requirement and not construction requirements.

Comment 1

Item #:

094

Code Number:

2024 USPSHTC

Sections(s):

Appendix D, Table 1001.2

Submitter Name:

Jim Majerowicz

Organization Name:

Plumbers Local 130, UA

Organization Representation:

Recommendation:

Accept the Code Change Proposal as Submitted

Proposed Text:

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

Substantiation:

The USPSHTC regulates systems that require specialized technical knowledge to ensure proper installation, inspection, and ongoing maintenance. However, the base code does not define minimum competency requirements for the individuals performing this work. Without these defined qualifications, jurisdictions may experience inconsistent enforcement, increased installation errors, and a higher likelihood of safety or performance issues.

Appendix D resolves this gap by referencing nationally recognized ASSE/IAPMO/ANSI professional qualification standards. These standards establish clear and measurable competency criteria that correspond directly to the technical systems governed by the USPSHTC. Their inclusion ensures that individuals performing code-regulated work have verified knowledge and skills appropriate to their tasks.

By placing these qualifications in Appendix D, jurisdictions are provided with a consistent method for determining who is qualified to perform the work regulated by the USPSHTC. Adoption of these qualifications remains optional and may be required by a jurisdiction only if deemed appropriate. The appendix also incorporates specialized qualifications related to water management and infection risk mitigation, which are essential for addressing hazards such as Legionella and other waterborne pathogens.

Read-only versions of the ASSE/IAPMO/ANSI standards are provided for your review via the following links:

[ASSE/IAPMO/ANSI Series 5000](#), [ASSE/IAPMO/ANSI Series 12000](#), [ASSE/IAPMO/ANSI Series 13000](#),
[ASSE/IAPMO/ANSI Series 16000](#)

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Item #:
096

Code Number:
2024 USPSHTC

Section Number:
Table 1001.1

SUBMITTER:
Shannon Banchemo

Organization Name:
ACI

Organization Representation:

RECOMMENDATION:
Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ACI 318- 2019 (R2022) 2025	Building Code Requirements for Structural Concrete	Miscellaneous	402.3.1, 405.3.1, 416.1.1

(portions of table not shown remain unchanged)

Note: ACI 318 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:

The above revision reflects the latest update to the ACI standard that is referenced in Table 1001.1.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:
096

Code Number:
2024 USPSHTC

Sections(s):
Table 1001.1

Submitter Name:
IAPMO Staff

Organization Name:
IAPMO

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
AS			
AS 4586-2013	Slip Resistance Classification of New Pedestrian Surface Materials <u>(with Amendment No. 1)</u>	Slip Resistance	315.2

(portions of table not shown remain unchanged)

Note: AS 4586 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:

The above revision reflects the latest update to the AS standard that is referenced in Table 1001.1.

Comment 2

Item #:

096

Code Number:

2024 USPSHTC

Section(s):

Table 1001.1

Submitter Name:

James Neckel

Organization Name:

ASCE

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASCE			
ASCE <u>/SEI</u> 24-2014 <u>2024</u>	Flood Resistant Design and Construction	Miscellaneous	302.5

(portions of table not shown remain unchanged)

Note: ASCE/SEI 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:

The above revision reflects the latest update to the ASCE standard that is referenced in Table 1001.1.

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Item #:

097

Code Number:

2024 USPSHTC

Section Number:

Table 1001.2

SUBMITTER:

Emily Toto

Organization Name:

ASHRAE

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

TABLE 1001.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ANSI/ASHRAE/IES 90.1- 2019 2022	Energy Standard for <u>Sites and</u> Buildings Except Low-Rise Residential Buildings	Miscellaneous

(portions of table not shown remain unchanged)

Note: The ASHRAE standard 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.

SUBSTANTIATION:

The above revision reflects the latest update to the ASHRAE standard that is referenced in Table 1001.2.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

097

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.2

Submitter Name:

Emily Toto

Organization Name:

ASHRAE

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ASHRAE		
ASHRAE 62.1- 2022 2025	Ventilation and Acceptable Indoor Air Quality	Heating, Ventilating, and Air-Conditioning

(portions of table not shown remain unchanged)

Substantiation:

The above revision reflects the latest update to the ASHRAE 62.1 standard that is referenced in Table 1001.2. Read-only versions of ASHRAE standards may be accessed via the following link: [Preview ASHRAE Standards & Guidelines](#)

Item #:

098

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1, Table 1001.2

SUBMITTER:

Steven Rossi

Organization Name:

ASME

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME A112.18.1- 2018 2024 /CSA B125.1- 2018 2024	Plumbing Supply Fittings	Fittings	410.2, 411.2, 411.3
ASME A112.19.1- 2018 2024 /CSA B45.2- 2018 2024	Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures	Fixtures	410.1, 411.1, 413.1
ASME A112.19.2- 2018 2024 /CSA B45.1- 2018 2024	Ceramic Plumbing Fixtures	Fixtures	408.1, 408.2, 408.2.2, 409.1, 410.1, 411.1, 413.1
ASME A112.19.12-2014 (R2019)(R2024)	Wall Mounted, Pedestal Mounted, Adjustable, Elevating, Tilting, and Pivoting Lavatory, Sink, and Shampoo Bowl Carrier Systems and Drain Waste Systems	Fixtures	410.1
ASSE 1070-2020/ASME A112.1070-2020/CSA B125.70-2020 (R2025)	Performance Requirements for Water Temperature Limiting Devices	Valves	410.3
ASME B16.15- 2018 2024	Cast Copper Alloy Threaded Fittings: Classes 125 and 250	Fittings	Table 308.1
ASME B16.29- 2017 2022	Wrought Copper and Wrought Copper Alloy Solder- Joint Drainage Fittings - DWV	Fittings	Table 310.1

(portions of table not shown remain unchanged)

Note: The ASME 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 B16.20- 2017 2023	Metallic Gaskets for Pipe Flanges	Joints

(portions of table not shown remain unchanged)

SUBSTANTIATION:

The above revisions reflect the latest updates to the ASME standards that are referenced in Table 1001.1 and Table 1001.2.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

098

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.1, Table 1001.2

Submitter Name:

Steven Rossi

Organization Name:

ASME

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME			
ASME A112.19.17-2010 (R2018)(R2023)	Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems	Safety Systems	810.2

ASME B16.12- 2019 2025	Cast Iron Threaded Drainage Fittings	Fittings	Table 310.1
ASME B16.26- 2018 2024	Cast Copper Alloy Fittings for Flared Copper Tubes	Fittings	Table 308.1

(portions of table not shown remain unchanged)

Note: The ASME standards were not provided at the time of this monograph.

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

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ASME		
ASME A112.19.7-2020/CSA B45.10-2020 (R2025)	Hydromassage Bathtub Systems	Fixtures
ASME B16.5- 2020 2025	Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch	Fittings
ASME B16.34- 2020 2025	Valves - Flanged, Threaded, and Welding End	Valves
ASME B16.39- 2019 2025	Malleable Iron Threaded Pipe Unions: Classes 150, 250, and 300	Fittings
ASME B16.47- 2020 2025	Large Diameter Steel Flanges: NPS 26 through NPS 60 Metric/Inch	Fittings

(portions of table not shown remain unchanged)

Note: ASME standards were not provided at the time of this monograph.

Substantiation:

The above revisions reflect the latest updates to the ASME standards that are referenced in Table 1001.1 and Table 1001.2.

Comment 2

Item #:
098

Code Number:
2024 USPSHTC

Sections(s):
408.2.1, Table 1001.1

Submitter Name:
Arnold Rodio

Organization Name:
USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

408.0 Water Closets.

408.2 Water Consumption. (text not shown remain unchanged)

408.2.1 Dual Flush Water Closets. Dual flush water closets shall comply with ~~ASME A112.19.14~~ ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4, or CSA B45.5/IAPMO Z124. The effective flush volume for dual flush water closets shall be defined as the composite, average flush volume of two reduced flushes and one full flush.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME A112.19.14-2013	Six Liter Water Closets Equipped with a Dual Flushing Device	Fixtures	408.2.1

(portion of table not shown remain unchanged)

Substantiation:

The promulgator indicated that ASME A112.19.14 was absorbed into ASME A112.19.2/CSA B45.1. Therefore standard (ASME A112.119.14) is being stricken in Table 1001.1 and being updated to the later standard Section 408.2.1 to reflect this update. Additionally, ASME A112.19.3/CSA B45.4 and CSA B45.5/IAPMO Z124 are being added to harmonize with the similar UPC provisions for dual flush water closets.

Item #:

099

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1, Table 1001.2

SUBMITTER:

Terry Burger

Organization Name:

ASSE

Organization Representation:

ASSE

RECOMMENDATION:

Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASSE/ ANSI 1019- 2011 (R2016) 2023	Performance Requirements for Wall Hydrant with Backflow Protection and Freeze Resistance	Backflow Protection	415.1
ASSE 1070-2020/ ASME A112.1070-2020/ CSA B125.70-2020 (R2025)	Performance Requirements for Water Temperature Limiting Devices	Valves	410.3
ASSE/ IAPMO/ANSI/ CAN 1079- 2012 (R2021)2024	Performance Requirements for Dielectric Pipe Unions	Joints	309.15, 309.16.1, 309.16.3

(portions of table not shown remain unchanged)

Note: The ASSE 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
ASSE/ ANSI 1011- 2017 2023	Performance Requirements for Hose Connection Vacuum Breakers	Backflow Protection
ASSE/ ANSI 1017- 2009 2023	Performance Requirements for Temperature Actuated Mixing Valves for Hot Water Distribution Systems	Valves
ASSE/ ANSI 1024- 2017 (R2021) 2023	Performance Requirements for Dual Check Backflow Preventers	Backflow Protection
ASSE/ ANSI 1052- 2016 2023	Performance Requirements for Hose Connection Backflow Preventers	Backflow Protection
ANSI/CAN/ASSE/IAPMO /ANSI/CAN 1055- 2020 2023	Performance Requirements for Chemical Dispensers with Integral Backflow Protection	Backflow Protection

ASSE/ ANSI 1057- 2012 2023	Performance Requirements for Freeze Resistant Sanitary Yard Hydrants with Backflow Protection	Backflow Protection
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(portions of table not shown remain unchanged)

SUBSTANTIATION:

The above revisions reflect the latest updates to the ASSE standards that are referenced in Table 1001.1 and Table 1001.2.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

099

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.1, Table 1001.2

Submitter Name:

Terry Burger

Organization Name:

ASSE

Organization Representation:

ASSE

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASSE			
ASSE 1061- 2020 2025	Performance Requirements for Push-Fit Fittings	Fittings	Table 308.1, 309.1.3.3, 309.2.1.1, 309.3.2.1
ASSE 1069-2020 (R2025)	Performance Requirements for Automatic Temperature Control Mixing Valves	Valves	411.3

(portions of table not shown remain unchanged)

Note: ASSE 1061 and ASSE 1069 meet the requirements for mandatory referenced 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
ASSE		
ASSE 1020-2020 (R2020)	Performance Requirements for Pressure Vacuum Breaker Assemblies	Backflow Protection
ASSE 1060-2017 (R2021) (R2025)	Performance Requirements for Outdoor Enclosures for Fluid Conveying Components	Miscellaneous

(portions of table not shown remain unchanged)

Substantiation:

The above revisions reflect the latest updates to the ASSE standards that are referenced in Table 1001.1 and Table 1001.2.

Item #:

100

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1, Table 1001.2

SUBMITTER:

Frank McConnell

Organization Name:

ASTM

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASTM A53/A53M- 2022 2024	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless	Piping, Ferrous	Table 308.1, Table 310.1
ASTM A240/A240M- 2022b 2025	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications	Miscellaneous	402.3.3, 405.3.3
ASTM A269/A269M- 2022 2024	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service	Piping, Ferrous	Table 308.1
ASTM A312/A312M- 2022a 2024b	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	Piping, Ferrous	Table 308.1
ASTM A778/A778M- 2022 2024a	Standard Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products	Piping	Table 308.1
ASTM A888- 2021a 2024	Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications	Piping, Ferrous	Table 310.1
ASTM B813- 2016 2024	Standard Specification for <u>Water Flushable</u> Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	Joints	309.1.4, 311.3.3
ASTM B828- 2016 2023	Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	Joints	309.1.4, 311.3.3
ASTM B1010/B1010M- 2019 (R2024)	Standard Specification for Copper-Clad Steel Electrical Conductor for Tracer Wire Applications	Miscellaneous	308.8.1
ASTM D2241- 2020 2024	Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure Rated Pipe (SDR Series)	Piping, Plastic	Table 308.1
ASTM D2464- 2015 2023	Standard Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 308.1
ASTM D2466- 2021 2024	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	Fittings	Table 308.1
ASTM D2467- 2020 2024	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 308.1

ASTM D2564-2020 (R2024)	Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems	Joints	309.12.2, 311.5.2
ASTM D2609-20212024	Standard Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe	Fittings	Table 308.1
ASTM D2661-20212024	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings	Piping, Plastic	Table 310.1
ASTM D2665-20202024	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Piping, Plastic	Table 310.1
ASTM D2846/D2846M-2019a2024	Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems	Piping, Plastic	Table 308.1, 309.2.2, 309.3.1
ASTM D3261-20162024	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	Fittings	Table 308.1
ASTM F437-20212024	Standard Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 308.1
ASTM F438-20172023	Standard Specification for Socket-Type Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40	Fittings	Table 308.1
ASTM F439-20192024	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80	Fittings	Table 308.1
ASTM F441/F441M-20202023	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80	Piping, Plastic	Table 308.1
ASTM F442/F442M-20202023	Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)	Piping, Plastic	Table 308.1, 309.2.2
ASTM F628-20222024	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe with a Cellular Core	Piping, Plastic	Table 310.1
ASTM F876-20232024b	Standard Specification for Crosslinked Polyethylene (PEX) Tubing	Piping, Plastic	Table 308.1, 309.9.1
ASTM F877-20232024	Standard Specification for Crosslinked Polyethylene (PEX) Hot- and Cold-Water Distribution Systems	Piping, Plastic	Table 308.1
ASTM F891-20162024	Standard Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core	Piping, Plastic	Table 310.1
ASTM F1281-2017(R2021)e12024	Standard Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe	Piping, Plastic	Table 308.1
ASTM F1282-20172023a	Standard Specification for Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure Pipe	Piping, Plastic	Table 308.1
ASTM F1346-1991(R2018)2023	Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs	Miscellaneous	803.5, 806.1

ASTM F1488- 2014 (R2019)2024	Standard Specification for Coextruded Composite Pipe	Piping, Plastic	Table 310.1
ASTM F1807- 2019b 2023	Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring, or Alternate Stainless Steel Clamps, for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 308.1
ASTM F1866- 2018 2023	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Schedule 40 Drainage and DWV Fabricated Fittings	Fittings	Table 310.1
ASTM F1960- 2023 2024	Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 308.1
ASTM F1970- 2023 2024	Standard Specification for Special Engineered Fittings, Appurtenances or Valves for Use in Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Systems	Piping, Plastic	Table 308.1
ASTM F1974- 2009 (R2020)2023	Standard Specification for Metal Insert Fittings for Polyethylene/Aluminum/Polyethylene and Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene Composite Pressure Pipe	Fittings	Table 308.1, 309.7.1, 309.10.1
ASTM F2080- 2019 2023	Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Crosslinked Polyethylene (PEX) Pipe and SDR9 Polyethylene of Raised Temperature (PE-RT) Pipe	Fittings	Table 308.1
ASTM F2098- 2018 2024	Standard Specification for Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) to Metal Insert and Plastic Insert Fittings	Joints	Table 308.1
ASTM F2159- 2021 2023a	Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring, or Alternate Stainless Steel Clamps for SDR9 Crosslinked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing	Joints	Table 308.1
ASTM F2286-2016 (R2023)	Standard Design and Performance Specification for Removable Mesh Fencing for Swimming Pools, Hot Tubs, and Spas	Fencing	803.3.4
ASTM F2376- 2022 2024	Standard Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems	Water Slides	906.1
ASTM F2389- 2021 2024a	Standard Specification for Pressure-Rated Polypropylene (PP) Piping Systems	Piping, Plastic	Table 308.1, 309.11.1
ASTM F2461- 2020a 2023	Standard Practice for Manufacture, Construction, Operation, and Maintenance of Aquatic Play Equipment	Equipment	908.14

ASTM F2620- 2020 ^a e2 ²⁰²⁴	Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings	Joints	309.6.1.1, 309.6.1.3
ASTM F2707-2010 (R2018) ^{e1} (R2024)	Standard Safety Performance Specification for Safe Design and Installation of Field Fabricated Suction-Limiting Vent Systems for Suction Entrapment Prevention in Swimming Pools, Spas, Hot Tubs, and Wading Pools	Entrapment Prevention	810.3
ASTM F2735- 2021 ²⁰²³	Standard Specification for Plastic Insert Fittings for SDR9 Cross-linked Polyethylene (PEX) and Polyethylene of Raised Temperature (PE-RT) Tubing	Fittings	Table 308.1
ASTM F2769- 2023 ²⁰²⁴	Standard Specification for Polyethylene of Raised Temperature (PE-RT) Plastic Hot and Cold-Water Tubing and Distribution Systems	Piping and Fittings, Plastic	Table 308.1
ASTM F2855-2019 (R2024)	Standard Specification for Chlorinated Poly(Vinyl Chloride)/Aluminum/ Chlorinated Poly(Vinyl Chloride) (CPVC-AL-CPVC) Composite Pressure Tubing	Piping, Plastic	Table 308.1, 309.3.1
ASTM F3133- 2021 ²⁰²⁴	Standard Practice for Classification, Design, Manufacture, Construction, Maintenance, and Operation of Stationary Wave Systems	Wave Pools	907.7
ASTM F3226/F3226M- 2019 (R2024)	Standard Specification for Metallic Press-Connect Fittings for Piping and Tubing Systems	Fittings	Table 308.1

(portions of table not shown remain unchanged)

Note: The ASTM 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
ASTM A126-2004 (R2019) ^(R2023)	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings	Piping, Ferrous
ASTM A861-2004 (R2017) ^(R2023)	Standard Specification for High-Silicon Iron Pipe and Fittings	Piping, Ferrous
ASTM B152/B152M- 2019 ²⁰²⁴	Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar	Miscellaneous
ASTM B687-1999 (R2016) ^(R2023)	Standard Specification for Brass, Copper, and Chromium-Plated Pipe Nipples	Piping, Copper Alloy
ASTM D2657-2007 (R2015) ^(R2023)	Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings	Joints

ASTM D2855-2020 (R2024)	Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets	Joints
ASTM F714- 2022 2024	Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter	Piping, Plastic
ASTM F1476-2007 (R2019) (R2024)	Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications	Joints
ASTM F2165- 2019 2024	Standard Specification for Flexible Pre-Insulated Plastic Piping	Piping, Plastic
ASTM F2509- 2015 (R2019) 2024	Standard Specification for Field-Assembled Anodeless Riser Kits for Use on Outside Diameter Controlled Polyethylene and Polyamide-11 (PA11) Gas Distribution Pipe and Tubing	Fuel Gas

(portions of table not shown remain unchanged)

SUBSTANTIATION:

The above revisions reflect the latest updates to the ASTM standards that are referenced in Table 1001.1 and Table 1001.2.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

100

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.1, Table 1001.2

Submitter Name:

Frank McConnell

Organization Name:

ASTM

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASTM			
ASTM A74- 2021 2025	Standard Specification for Cast Iron Soil Pipe and Fittings	Piping, Ferrous	Table 310.1
ASTM A240/A240M-2025a	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications	Miscellaneous	402.3.3, 405.3.3
ASTM A269/A269M-20242025	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service	Piping, Ferrous	Table 308.1
ASTM A312/A312M-2024b2025	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	Piping, Ferrous	Table 308.1
ASTM B42- 2020 2025	Standard Specification for Seamless Copper Pipe, Standard Sizes	Piping, Copper Alloy	Table 308.1
ASTM B251/B251M-20172025	Standard Specification for General Requirements for Wrought Seamless Copper and Copper-Alloy Tube	Piping, Copper Alloy	Table 308.1, Table 310.1
ASTM D2239- 2022 2025	Standard Specification for Polyethylene (PE) Plastic Pipe (SIDR-PR) Based on Controlled Inside Diameter	Piping, Plastic	Table 308.1
ASTM D2241-20242025a	Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure Rated Pipe (SDR Series)	Piping, Plastic	Table 308.1
ASTM D2665-20242025	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings	Piping, Plastic	Table 310.1
ASTM D2680-2020 (R2025)	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Composite Sewer Piping	Piping, Plastic	Table 310.1
ASTM D2737- 2022 2025	Standard Specification for Polyethylene (PE) Plastic Tubing	Piping, Plastic	Table 308.1
ASTM D3139-2019 (R2025)	Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	Joints	309.12.1
ASTM F876-2024b2025	Standard Specification for Crosslinked Polyethylene (PEX) Tubing	Piping, Plastic	Table 308.1, 309.9.1
ASTM F877-20242025	Standard Specification for Crosslinked Polyethylene (PEX)	Piping, Plastic	Table 308.1

	Hot- and Cold-Water Distribution Systems		
ASTM F1281- 2024 2025 ^{e1}	Standard Specification for Crosslinked Polyethylene/Aluminum/Crosslinked Polyethylene (PEX-AL-PEX) Pressure Pipe	Piping, Plastic	Table 308.1
ASTM F1487- 2021 2025	Standard Consumer Safety Performance Specification for Playground Equipment for Public Use	Equipment	908.14
ASTM F1488- 2024 2025	Standard Specification for Coextruded Composite Pipe	Piping, Plastic	Table 310.1
ASTM F2098- 2024 2025	Standard Specification for Stainless Steel Clamps for Securing SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) to Metal Insert and Plastic Insert Fittings	Joints	Table 308.1
ASTM F2208-2008 (R2019)(R2025)	Standard Safety Specification for Residential Pool Alarms	Alarms	803.8

(portions of table not shown remain unchanged)

Note: The ASTM standards meet the requirements for mandatory referenced 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
ASTM		
ASTM A733- 2016 (R2022)2025	Standard Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples	Piping, Ferrous
ASTM F714- 2024 2025	Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter	Piping, Plastic

(portions of table not shown remain unchanged)

Substantiation:

The above revisions reflect the latest updates to the ASTM standards that are referenced in Table 1001.1 and Table 1001.2.

Item #:

102

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1, Table 1001.2

SUBMITTER:

Paul Olson

Organization Name:

AWWA

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
AWWA C1111/A21.11- 2017 <u>2023</u>	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	Joints	309.4.1, 309.4.2
AWWA C151/A21.51- 2017 <u>2023</u>	Ductile-Iron Pipe, Centrifugally Cast	Piping, Ferrous	Table 308.1
AWWA C907- 2017 <u>2023</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	Fittings	Table 308.1

(portions of table not shown remain unchanged)

Note: The AWWA 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	
AWWA C507- 2018 <u>2023</u>	Ball Valves, 64 <u>64</u> in. through 60 in. (150 <u>100</u> mm through 1,500 mm)	Valves	

(portions of table not shown remain unchanged)

SUBSTANTIATION:

The above revisions reflect the latest updates to the AWWA standards that are referenced in Table 1001.1 and Table 1001.2.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

102

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.1, Table 1001.2

Submitter Name:

Paul Olson

Organization Name:

AWWA

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
AWWA			
AWWA C901- 2020 2025	Polyethylene (PE) Pressure Pipe and Tubing, 3/4 in. (19 mm) through 3 in. (76 mm), for Water Service	Piping, Plastic	Table 308.1

(portions of table not shown remain unchanged)

Note: AWWA C901 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.

TABLE 1001.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
AWWA		
AWWA C203- 2020 2025	Coal-Tar Protective Coatings and Linings for Steel Water Pipe	Miscellaneous

(portions of table not shown remain unchanged)

Substantiation:

The above revisions reflect the latest updates to the AWWA standards that are referenced in Table 1001.1 and Table 1001.2.

Item #:
103

Code Number:
2024 USPSHTC

Section Number:
Table 1001.1

SUBMITTER:
Nikki Kidd

Organization Name:
CSA

Organization Representation:

RECOMMENDATION:
Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
ASME A112.18.1- 2018 2024 /CSA B125.1- 2018 2024	Plumbing Supply Fittings	Fittings	410.2, 411.2, 411.3
ASME A112.19.1- 2018 2024 /CSA B45.2- 2018 2024	Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures	Fixtures	410.1, 411.1, 413.1
ASME A112.19.2- 2018 2024 /CSA B45.1- 2018 2024	Ceramic Plumbing Fixtures	Fixtures	408.1, 408.2, 408.2.2, 409.1, 410.1, 411.1, 413.1
CSA B137.1- 2020 2023	Polyethylene (PE) Pipe, Tubing, and Fittings for Cold-Water Pressure Services	Piping, Plastic	Table 308.1
CSA B137.5- 2020 2023	Crosslinked Polyethylene (PEX) Tubing Systems for Pressure Applications	Piping, Plastic	Table 308.1
CSA B137.6- 2020 2023	Chlorinated Polyvinylchloride (CPVC) Pipe, Tubing, and Fittings for Hot- and Cold-Water Distribution Systems	Piping, Plastic	Table 308.1
CSA B137.9- 2020 2023	Polyethylene/Aluminum/Polyethylene (PE-AL-PE) Composite Pressure-Pipe Systems	Piping, Plastic	Table 308.1
CSA B137.10- 2020 2023	Crosslinked Polyethylene/Aluminum/ Crosslinked Polyethylene (PEX-AL-PEX) Composite Pressure-Pipe Systems	Piping, Plastic	Table 308.1
CSA B137.11- 2020 2023	Polypropylene (PP-R & PP-RCT) Pipe and Fittings for Pressure Applications	Piping, Plastic	Table 308.1, 309.11.1
CSA B137.18- 2020 2023	Polyethylene of Raised Temperature Resistance (PE-RT) Tubing Systems for Pressure Applications	Piping, Fittings	Table 308.1
CSA/ANSI Z21.56- 2019 (R2024)/CSA 4.7-2019 (R2024)	Gas-Fired Pool Heaters	Fuel Gas, Appliances and Equipment	405.4, 702.1

(portions of table not shown remain unchanged)

Note: The CSA 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.

SUBSTANTIATION:

The above revisions reflect the latest updates to the CSA standards that are referenced in Table 1001.1.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

103

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.1, Table 1001.2

Submitter Name:

Nikki Kidd

Organization Name:

CSA

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
CSA			
ASSE 1070-2020/ASME A112.1070-2020/CSA B125.70-2020 (R2025)	Performance Requirements for Water Temperature Limiting Devices	Valves	410.3

(portions of table not shown remain unchanged)

Note: ASSE 1070/ASME A112.1070/CSA B125.70 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.

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

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
CSA		
ASME A112.19.7-2020/CSA B45.10-2020 (R2025)	Hydromassage Bathtub Systems	Fixtures
CSA Z21.22-2015 (R2020)(R2025)/CSA 4.4-2015 (R2020)(R2025)	Relief Valves for Hot Water Supply Systems	Valves

(portions of table not shown remain unchanged)

Substantiation:

The above revisions reflect the latest updates to the CSA standards that are referenced in Table 1001.1 and Table 1001.2.

Comment 2

Item #:

103

Code Number:

2024 USPSHTC

Sections(s):

414.1, Table 1001.1

Submitter Name:

Arnold Rodio

Organization Name:

USPSHTC Code Change Review
Task Group, Chair

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

414.0 Floor Drains.

414.1 General. Floor drains shall comply with ASME A112.3.1, or ASME A112.6.3/CSA B79.3, ~~or CSA B79~~ and provide a water-tight joint in the floor. Floor drains shall be installed in toilet facilities containing two or more water closets or a combination of one water closet and one urinal. Floor drains shall be provided with an approved type of strainer having a waterway equivalent to the area of the tailpiece and floors shall be sloped to floor drains. Trench drains shall comply with ASME A112.6.8/CSA B79.8.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
CSA B79-2008 (R2018)	Commercial and Residential Drains and Cleanouts	DWV Components	414.1
<u>ASME A112.6.8-2022/CSA B79.8-2022</u>	<u>Trench Drains</u>	<u>Drains</u>	<u>414.1</u>

(portion of table not shown remain unchanged)

Note: ASME A112.6.8/CSA B79.8 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:

The promulgator indicated that CSA B79 is being superseded by the following standards:

- ASME A112.36.2-2022/CSA B79.2:22, Cleanouts
- ASME A112.6.3-2022/CSA B79.3:22, Floor drains
- ASME A112.6.4-2022/CSA B79.4:22, Roof, deck, and balcony drains
- ASME A112.6.7-2022/CSA B79.7:22, Sanitary floor sinks
- ASME A112.6.8-2022/CSA B79.8:22, Trench drains
- ASME A112.6.9-2022/CSA B79.9:22, Siphonic roof drains

CSA B79 was referenced in Section 414.1 (General) and is being updated to address the standard change. The updates add the relevant standard and remove the superceded (CSA B79) standard.

Item #:

104

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1, Table 1001.2

SUBMITTER:

Terry Burger

Organization Name:

ASSE

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
IAPMO SPS 4-2019 ^{e1}	Special Use Suction Fittings for Swimming Pools, Spas and Hot Tubs (for Suction Side Automatic Swimming Pool Cleaners)	Fittings	512.1.2.1
CSA B45.5-2022/IAPMO Z124-2022 ^{e1}	Standard for Plastic Plumbing Fixtures	Fixtures	408.1, 409.1, 410.1, 411.1
IAPMO/ ANSI Z124.5-2013 ^{e1} (R2018)(R2023)	Plastic Toilet Seats	Fixtures	408.3
IAPMO/ ANSI Z124.7-2013 (R2018)(R2023)	Prefabricated Plastic Spa Shells	Fixtures	405.3.2

(portions of table not shown remain unchanged)

Note: The IAPMO 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
ANSI/CAN/ASSE/IAPMO ASSE/IAPMO/ANSI/CAN 1055- 2020 2023	Performance Requirements for Chemical Dispensers with Integral Backflow Protection	Backflow Protection
IAPMO PS 42- 2022 2024	Industry Standard for Pipe and Tubing Alignment and Secondary Support Systems with or without Pipe and Tubing Safety or Protection	Miscellaneous
IAPMO/ ANSI Z124.8-2013 ^{e2} (R2018)(R2023)	Plastic Liners for Bathtubs and Shower Receptors	Fixtures

(portions of table not shown remain unchanged)

SUBSTANTIATION:

The above revisions reflect the latest updates to the IAPMO standards that are referenced in Table 1001.1 and Table 1001.2.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

TCC:

The TCC has the responsibility to resolve conflicts and achieve correlation among the recommendations of the Technical Committee. The TCC has the authority to choose between alternative text recommended by the Technical Committee, but only as necessary for correlation, consistency, and the correction of errors and omissions in accordance with Section 3.6 of the Regulations Governing Consensus Development of the Uniform Solar, Hydronics & Geothermal and Swimming Pool, Spa & Hot Tub Codes.

The actions taken by the USPSHTC TC to “accept as submitted” Item #104 do not correlate with the actions taken by the USHGC TC to “accept as submitted” Item #001 regarding the updated document title for the USHGC. In order to correlate the language, the Technical Correlating Committee proposed the following modifications to the USPSHTC:

Proposed Text TCC

221.0 - S -

Solar, Hydronics and Geothermal Code. For the purpose of this code, a reference to the Solar, Hydronics and Geothermal Code (The Renewable Energy Code) shall mean the Uniform Solar, Hydronics and Geothermal Code as promulgated by the International Association of Plumbing and Mechanical Officials (IAPMO).

702.0 Heaters.

702.5 Solar Pool, Spa, and Hot Tub Heaters. Where solar technology is used to heat a swimming pool, spa, or hot tub, it shall comply with NSF/ANSI/CAN 50 and be installed in accordance with the Uniform Solar, Hydronics and Geothermal Code (The Renewable Energy Code), Section 702.5.1 through Section 702.5.3, and the manufacturer’s installation instructions.

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
<u>IAPMO/ANSI USHGC 1-2024</u>	<u>Uniform Solar, Hydronics and Geothermal Code (The Renewable Energy Code)</u>	<u>Solar energy systems</u>	<u>702.5</u>

(portions of table not shown remain unchanged)

TCC Action:

Accept as Submitted

TCC Statement:

The language in USPSHTC Item #104, Section 702.5 (Solar Pool, Spa, and Hot Tub Heaters) is being revised to correlate with the action taken by the USHGC TC for Item #001, Section 101.1 (Title) regarding the updated standard title.

Additionally, the definition for "Solar, Hydronics and Geothermal Code" in the USPSHTC is being revised for consistency, and USPSHTC Table 1001.1 (Referenced Standards) is being revised to correct an oversight by adding the missing referenced standard, USHGC-1.

The action moves forward as approved by the TCC and supersedes the recommendation from the USPSHTC TC for actions addressing the USHGC title update by adding "(The Renewable Energy Code)."

Comment 1

Item #:

104

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.1, Table 1001.2

Submitter Name:

Terry Burger

Organization Name:

ASSE

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
IAPMO			
IAPMO Z1033- 2015 (R2020)2025	Flexible PVC Hoses and Tubing for Pools, Hot Tubs, Spas, and Jetted Bathtubs	Miscellaneous	308.10

(portions of table not shown remain unchanged)

Note: IAPMO Z1033 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.

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

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
IAPMO		
IAPMO PS 36- 2014 ^{e1} <u>2025</u>	Lead-Free Sealing Compounds for Threaded Joints	Joints
IAPMO PS 42- 2024 <u>2025</u>	Industry Standard for Pipe and Tubing Alignment and Secondary Support Systems with or without Pipe and Tubing Safety or Protection	Miscellaneous
IAPMO PS 53- 2020 <u>2021</u>	Industry Standard for Grooved Mechanical Pipe Couplings and Grooved Fittings	Joints

(portions of table not shown remain unchanged)

Substantiation:

The above revisions reflect the latest updates to the IAPMO standards that are referenced in Table 1001.1 and Table 1001.2.

Comment 2

Item #:
104

Code Number:
2024 USPSHTC

Sections(s):
Table 1001.2

Submitter Name:
Karl Aittaniemi

Organization Name:
ICC

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

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

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
ICC		
APSP/ICC 1-2014 <u>(R2023)</u>	Public Swimming Pools	Miscellaneous
APSP/ICC 4-2012 <u>(R2022)</u>	Aboveground/Onground Residential Pools (includes Addenda A approved April 4, 2013)	Miscellaneous
APSP/ICC 5-2011 <u>(R2022)</u>	Residential Inground Swimming Pools (includes Addenda A approved June 28, 2012)	Miscellaneous

(portions of table not shown remain unchanged)

Substantiation:

The above revisions reflect the latest updates to the ICC standards that are referenced in Table 1001.2.

Comment 3

Item #:

104

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.2

Submitter Name:

Lorna Soderberg

Organization Name:

MSS

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.2
STANDARDS, PUBLICATIONS, PRACTICES, AND GUIDES

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
MSS		
MSS SP-58- 2018 2025	Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation (including Amendment 1, dated October 17, 2019)	Fuel Gas

(portions of table not shown remain unchanged)

Substantiation:

The above revision reflects the latest update to the MSS standard that is referenced in Table 1001.2.

Item #:

105

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1, Table 1001.2

SUBMITTER:

Alexander Ing

Organization Name:

NFPA

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
NFPA 400- 2022 2025	Hazardous Material Code	Miscellaneous	807.3

(portions of table not shown remain unchanged)

Note: NFPA 400 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.

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

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
NFPA 31- 2020 2024	Installation of Oil-Burning Equipment	Fuel Gas, Appliances and Equipment

(portions of table not shown remain unchanged)

SUBSTANTIATION:

The above revisions reflect the latest updates to the NFPA standards that are referenced in Table 1001.1 and Table 1001.2.

Read-only versions of the referenced NFPA standards are provided for your review via the following links: [NFPA 400](#), [NFPA 31](#)

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**
105**Code Number:**
2024 USPSHTC**Sections(s):**
Table 1001.1**Submitter Name:**
Alexander Ing**Organization Name:**
NFPA**Organization Representation:****Recommendation:**
Accept the Proposal as Modified**Proposed Text:**Request to accept the code change proposal as modified by this public comment.

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
NFPA			
NFPA 70- 2023 2026	National Electrical Code	Miscellaneous	401.3, 405.1, 418.1, 603.1, 804.1
NFPA 780- 2023 2026	Installation of Lightning Protection Systems	Miscellaneous	401.2

(portions of table not shown remain unchanged)

Note: NFPA 70 and NFPA 780 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.

Substantiation:

The above revisions reflect the latest updates to the NFPA standards that are referenced in Table 1001.1.

Read-only versions of the referenced NFPA standards are provided for your review via the following links: [NFPA 70](#), [NFPA 780](#)

Item #:
106

Code Number:
2024 USPSHTC

Section Number:
Table 1001.1

SUBMITTER:
Jeremy Brown

Organization Name:
NSF

Organization Representation:

RECOMMENDATION:
Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
NSF/ANSI 14- 2022 2023	Plastics Piping System Components and Related Materials	Piping, Plastic	301.2, 308.1
NSF/ANSI/CAN 50- 2021 2024	Equipment and Chemicals for Swimming Pools, Spas, Hot Tubs, and Other Recreational Water Facilities	Appliances and Equipment	504.5, 506.1, 507.1, 507.1.3, 508.2, 509.1, 509.3, 510.1, 511.1, 604.1, 702.5, 908.2, 908.12, 908.16
NSF/ANSI/CAN 61- 2022 2024	Drinking Water System Components - Health Effects	Water Supply Components	308.1, 413.1, 504.6

(portions of table not shown remain unchanged)

Note: The NSF 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

SUBSTANTIATION:

The above revisions reflect the latest updates to the NSF standards that are referenced in Table 1001.1.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:
106

Code Number:
2024 USPSHTC

Sections(s):
Table 1001.1

Submitter Name:
Jeremy Brown

Organization Name:
NSF

Organization Representation:

Recommendation:
Accept the Proposal as Modified

Proposed Text:

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

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
NSF			
NSF/ANSI 14- 2023 2024	Plastics Piping System Components and Related Materials	Piping, Plastic	301.2, 308.1
NSF/ANSI/CAN 50- 2024 2025	Equipment and Chemicals for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities	Appliances and Equipment	504.5, 506.1, 507.1, 507.1.3, 508.2, 509.1, 509.3, 510.1, 511.1, 604.1, 702.5, 908.2, 908.12, 908.16

(portions of table not shown remain unchanged)

Note: NSF/ANSI 14 and NSF/ANSI/CAN 50 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.

Substantiation:

The above revisions reflect the latest updates to the NSF standards that are referenced in Table 1001.1.

Item #:

107

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1, Table 1001.2

SUBMITTER:

Gregory Ceton

Organization Name:

PHTA

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

**TABLE 1001.1
REFERENCED STANDARDS**

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTIONS
<u>ANSI/APSP/ICC 16-2017</u>	<u>American National Standard for</u> Suction Outlet Fitting Assemblies (SOFA) for Use in Pools, Spas and Hot Tubs	Fittings	512.1
ANSI/PHTA/ICC 10-2021	<u>American National Standard for</u> Elevated Pools, Spas and Other Aquatic Venues Integrated into a Building or Structure	Elevated Aquatic Venues	908.19

(portions of table not shown remain unchanged)

Note: ANSI/APSP/ICC 16 and ANSI/PHTA/ICC 10 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
<u>ANSI/APSP/ICC 1-2014 (R2023)</u>	<u>American National Standard for</u> Public Swimming Pools	Miscellaneous
<u>ANSI/APSP/ICC 3-2014 (R2023)</u>	<u>American National Standard for</u> Permanently Installed Residential Spas and Swim Spas	Miscellaneous
APSP/ANSI/PHTA/ICC 4-2012 <u>202X</u> (Working Draft)	<u>American National Standard for</u> Aboveground/Onground Residential Swimming Pools (includes Addenda A approved April 4, 2013)	Miscellaneous
APSP/ANSI/PHTA/ICC 5-2011 <u>202X</u> (Working Draft)	<u>American National Standard for</u> Residential Inground Swimming Pools (includes Addenda A approved June 28, 2012)	Miscellaneous
<u>ANSI/APSP/ICC 8-2005 (R2013) (R2023)</u>	<u>American National Standard for</u> Model Barrier Code for Residential Swimming Pools, Spas, and Hot Tubs	Miscellaneous
NSPI 2-1999	Public Spas	Miscellaneous

ANSI/PHTA/ICC 2-2023	American National Standard for Public Pool and Spa Operations and Maintenance	Miscellaneous
ANSI/PHTA/ICC 7-2020	American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins	Safety Systems

(portions of table not shown remain unchanged)

Note: ANSI/PHTA/ICC 4 and ANSI/PHTA/ICC 5 are working drafts and were not completed at the time of this monograph.

SUBSTANTIATION:

The above revisions reflect the latest updates to the APSP, IAF, NSPI, and PHTA standards that are referenced in Table 1001.1 and Table 1001.2. The NSPI 2-1999 standard is being stricken because it has been superseded by ANSI/PHTA/ICC 2-2023.

Committee Action:

Accept As Submitted

Committee Statement:

The TC is aware that ANSI/PHTA/ICC 4 and ANSI/PHTA/ICC 5 are working drafts and will not be incorporated.

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1

Item #:

107

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.2

Submitter Name:

Gregory Ceton

Organization Name:

PHTA

Organization Representation:

Recommendation:

Accept the Proposal as Modified

Proposed Text:

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

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

DOCUMENT NUMBER	DOCUMENT TITLE	APPLICATION
PHTA		
APSP ANSI/PHTA/ICC 4-2012 2025	American National Standard for Aboveground/Onground Residential Pools (includes Addenda A approved April 4, 2013)	Miscellaneous
APSP ANSI/PHTA/ICC 5-2011 2025	American National Standard for Residential Inground Swimming Pools (includes Addenda A approved June 28, 2012)	Miscellaneous

(portions of table not shown remain unchanged)

Substantiation:

The above revisions reflect the latest updates to the PHTA standards that are referenced in Table 1001.2.

Item #:

109

Code Number:

2024 USPSHTC

Section Number:

Table 1001.1

SUBMITTER:

Nikita Patel

Organization Name:

UL

Organization Representation:**RECOMMENDATION:**

Revise text

Proposed Text :

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
UL 96A- 2016 2023	Installation Requirements for Lightning Protection Systems (with revisions through October 12, 2022)	Miscellaneous	401.2
UL 399-2017	Drinking Water Coolers (with revisions through July 31, 2020 <u>February 28, 2024</u>)	Appliances	413.1
UL 676-2015	Underwater Luminaires and Submersible Junction Boxes (with revisions through October 22, 2019 <u>April 9, 2024</u>)	Miscellaneous	401.3.5
UL 676A-2003	<u>Outline of Investigation for</u> Potting Compounds for Swimming Pool, Fountain, and Spa Equipment	Miscellaneous	401.3.5
UL 726-1995	Oil-Fired Boiler Assemblies (with revisions through October 9, 2013 <u>September 24, 2024</u>)	Appliances and Equipment	702.2
UL 1480- 2016 2023	Speakers for Fire Alarm and Signaling Systems, Including Accessories (with revisions through September 7, 2017)	Miscellaneous	418.1
UL 1563- 2009 2025	Electric Spas, Equipment Assemblies, and Associated Equipment (with revisions through September 10, 2020)	Appliances and Equipment	405.1, 405.4, 511.1, 512.1, 604.1, 702.3
UL 1995- 2022 2015	Heating and Cooling Equipment (with revisions through August 1, 2022)	Appliances and Equipment	702.4
UL 2017-2008	General-Purpose Signaling Devices and Systems (with revisions through December 14, 2018 <u>January 17, 2024</u>)	Miscellaneous	803.5(2)
UL 2818- 2013 2022	Chemical Emissions for Building Materials, Finishes and Furnishings (with revisions through April 26, 2018)	Paint and Coatings	402.7, 417.2
UL 2989- 2022 2024	Outline of Investigation for Tracer Wire	Miscellaneous	308.8.1

(portions of table not shown remain unchanged)

Note: The UL 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.

SUBSTANTIATION:

The above revisions reflect the latest updates to the UL standards that are referenced in Table 1001.1.

Committee Action:

Accept As Submitted

TOTAL ELIGIBLE TO VOTE:

11

AFFIRMATIVE:

11

NEGATIVE:

0

ABSTAIN:

0

NOT RETURNED:

0

Comment 1**Item #:**

109

Code Number:

2024 USPSHTC

Sections(s):

Table 1001.1

Submitter Name:

Nikita Patel

Organization Name:

UL

Organization Representation:**Recommendation:**

Accept the Proposal as Modified

Proposed Text:

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

TABLE 1001.1
REFERENCED STANDARDS

STANDARD NUMBER	STANDARD TITLE	APPLICATION	REFERENCED SECTION
UL			
UL 676-2015	Underwater Luminaires and Submersible Junction Boxes (with revisions through April 9, 2024 <u>September 11, 2025</u>)	Miscellaneous	401.3.5
UL 1081- 2016 <u>2025</u>	Swimming Pool Pumps, Filters, and Chlorinators (with revisions through July 23, 2020)	Appliances and Equipment	507.2, 604.1
UL 2818-2022	Chemical Emissions for Building Materials, Finishes and Furnishings (WITHDRAWN)	Paint and Coatings	402.7, 417.2
UL 60335-2-40-2022	Household and Similar Electrical Appliances - Safety - Part 2-40: Particular Requirements for Electrical Heat Pumps, Air Conditioners and Dehumidifiers (<u>with revisions through October 31, 2025</u>)	Heat Pumps	702.4

(portions of table not shown remain unchanged)

Note: The UL 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.

Substantiation:

The above revisions reflect the latest updates to the UL standards that are referenced in Table 1001.1.

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**USPSHTC
Code Change Review
Task Group Report**

USPSHTC Code Change Review Task Group Report

Task Group Members:

Arnol Rodio (Chair)
Alison Osinski
Beth Hamil
Curtis Prystupa
James Majerowicz
Joseph Laco
Pat Lando
Ronald George

Representation:

Pace Setter Plumbing
Aquatic Consulting Services
O₃ Consulting
Self
Plumber JAC Local 130 UA
Centers for Disease Control (CDC)
Recode
Self

During the Uniform Swimming Pool, Spa and Hot Tub Code (USPSHTC) Teleconference Meeting on June 17, 2025, the USPSHTC TC requested that a Code Change Review Task Group be formed.

The scope of the Code Change Review Task Group, as approved by the USPSHTC TC, was to review all proposals submitted as published in the 2025 USPSHTC Report on Proposals (ROP) and develop public comments for technical committee consideration in the development of the 2027 edition of the USPSHTC.

The Task Group conducted a comprehensive review of the 2025 USPSHTC Report on Proposals (ROP) and developed technical recommendations in the form of public comments for consideration by the Technical Committee. This effort was carried out over the course of six structured meetings, which facilitated detailed discussion, technical analysis, and consensus-building among Task Group members.

During these meetings, the Task Group systematically reviewed each proposal contained within the USPSHTC ROP. All proposals were examined and questioned to ensure technical accuracy, clarity, and consistency with the intent of the Code. Particular attention was given to Technical Committee proposal comments, proposals that had been rejected, and items that failed to achieve approval, in order to identify underlying technical concerns, evaluate their merit, and determine whether revisions or alternative approaches were warranted.

Extensive technical deliberation was also dedicated to open water recreational venues and dedicated swimming areas. Each category of aquatic facility was evaluated independently, recognizing the distinct operational, environmental, and public health considerations associated with these venue types. Discussions focused on water quality parameters, including monitoring practices, treatment limitations, and risk factors inherent to non-traditional aquatic environments.

The Task Group further evaluated the applicability and adequacy of existing and proposed code provisions, considering whether modifications or additional guidance were necessary to address the unique environmental conditions, usage patterns, and operational characteristics of each venue type.

Upon completion of their final meeting, the Task Group generated and submitted 32 comments to the USPHTC for consideration during the Technical Committee Meetings scheduled for May 11, 2026.