

ISPSC



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**2018 GROUP A PROPOSED
CHANGES TO THE I-CODES
COLUMBUS COMMITTEE ACTION
HEARINGS**

April 15–23, 2018
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By

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2018 GROUP A – PROPOSED CHANGES TO THE INTERNATIONAL SWIMMING POOL AND SPA CODE

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TENTATIVE ORDER OF DISCUSSION 2018 PROPOSED CHANGES TO THE INTERNATIONAL SWIMMING POOL AND SPA CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation does not necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some SP code change proposals may not be included on this list, as they are being heard by another committee.

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SP1-18

ISPSC: 202

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Revise as follows:

SWIMOUT. An underwater seat area that is placed completely outside of the ~~perimeter shape~~ diving envelope of the pool. Where located at the deep end, swimouts are permitted to be used as the deep-end means of entry or exit to the pool.

Reason:

A swimout is not required to be outside of the perimeter shape of a pool. Many times they are located on those areas but they are not required to be. This revised wording agrees with Figure 322.2.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal only clarifies the original intent and normal practice of where swimouts are installed.

Internal ID: 1785

SP2-18

ISPSC: 202

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

SWIMOUT. An underwater ~~seat area shelf located in deep water~~ that is placed completely outside of the perimeter shape of the pool. ~~Where located at the deep end, swimouts are permitted to be used as the deep end means of entry or exit to the pool with stairs leading to the deck.~~

Reason:

The definition was changed to clarify the differences between swimouts and underwater seats. The definition of the swimout was changed to better align with its intent as a entry to and exit from the deep end of a pool. The code does not recognize a swimout in shallow water as one of the required entry/exit from the pool, so in shallow water it is simply an underwater bench/seat and should be constructed accordingly.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This clarifies the definition of a swimout but the requirements for a swimout are addressed in another section of the code so this change in definition does not increase or decrease the cost of construction.

Internal ID: 1600

SP3-18

ISPSC: 202

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

UNDERWATER SEAT-BENCH. ~~An underwater ledge that is seat that can be recessed into the pool wall or placed completely inside the perimeter shape of the pool, generally located in the shallow end of the pool.~~

Reason:

The current code refers to both underwater seats and benches but only an "underwater seat" is defined. It is more common to call a seat within a pool or spa simply as an "underwater bench", which would be consistent with the Model Aquatic Health Code. The definition should be changed from "underwater seat" to "underwater bench". Underwater benches are commonly recessed into the pool wall or placed completed inside the perimeter shape of the pool.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This is simply clarifying the definition of an underwater bench (seat) . Any requirements for the underwater bench are addressed separately within the code.

Internal ID: 1652

SP4-18

ISPSC: 305.1

Proponent: Tommy Moberg, Town of Acton, representing Town of Acton

2018 International Swimming Pool and Spa Code

Revise as follows:

305.1 General. The provisions of this section shall apply to the design of barriers for restricting entry into areas having pools and spas. Where spas a spa or hot tubs are tub is equipped with a lockable safety cover complying with ASTM F1346 and swimming pools are the areas where the spa or hot tub are located shall not be required to comply with Sections 305.2 through 305.7. Where a swimming pool is equipped with a powered safety cover that complies with ASTM F1346, and such cover is equipped with an occupant sensor to close the cover automatically when the swimming pool is not in use after 20 minutes, or is equipped with smart controller that alerts the pool owner when the pool cover has been opened, closed, and the amount of time the cover is open, the areas where those spas, hot tubs or pools are located shall not be required to comply with Sections 305.2 through 305.7.

Reason:

In the years leading up to the 2015 IPSC there has been a requirement for a passive barrier system. A design of that system was such that forgetting to close a gate, or close a door to the pool area was taken out of the day to day practice of pool safety. Install your barrier fence, self closing gates, alarms if needed and use your pool. But the new language only consists of an active system, and relies on the owner to uncover and recover the hazard after every use. This system has a high potential of failure. There needs to be some additional safety measures that will assist the owner to insure that the pool is safe when they forget to close the power safety.

Cost Impact

The code change proposal will increase the cost of construction .

The cost of the WIFI controller is around \$340.00 US.

Internal ID: 1139

SP5-18

ISPSC: 305.1.1 (New)

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

2018 International Swimming Pool and Spa Code

Add new text as follows:

305.1.1 Construction fencing required. The construction sites for in-ground swimming pools and spas shall be provided with construction fencing to surround the site from the time that any excavation occurs up to the time that the permanent barrier is completed. The fencing shall be not less than 4 feet in height.

Reason:

Usually, a pool contractor is not responsible for the fencing whether permanent or temporary during construction of a pool. A pool can be under construction for several weeks (or more) which presents a fall hazard/drowning hazard where there is not some type of barrier in place. Sometimes a pool is completed and the builder has moved onto the next job without any barrier around the completed pool. This new section requires a temporary barrier until the permanent barrier is erected. The specifics about what type of barrier is acceptable are left up to the contractor with oversight by the code official. It is not the intent of this proposal to require a temporary barrier to be constructed to the same way as the code's requirements for a permanent barrier.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact

The code change proposal will increase the cost of construction .

Rental of temporary construction fencing and its installation will add cost to a pool project for those contractors who have not already been taking precautions to secure the excavation/pool construction site. One national average for rental installation for 120' x 6 foot high of chain link fencing panels and bases for 1 month is \$480. Job site conditions and project site location could greatly affect the cost.

Internal ID: 523

SP6-18

ISPSC: 305.2.9

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

2018 International Swimming Pool and Spa Code

Revise as follows:

305.2.9 Clear zone. ~~There shall be a clear zone of~~ Where equipment, including pool equipment such as pumps, filters and heaters, is on the same lot as a pool or spa and such equipment is located outside of the barrier protecting the pool or spa, such equipment shall be located not less than 36 inches (914 mm) between from the exterior of the barrier and any permanent structures or equipment such as pumps, filters and heaters that can be used to climb outside of the barrier.

Reason:

When the ISPSC was drafted, the origin of the current language was the APSP standard covering on-ground pools. From the perspective of a 48 inch (or taller) wall of an on-ground pool serving as the barrier to entry into the pool and the fact that pumps, filters and heaters for on-ground pools are always on the outside of the pool wall, the current language has clear intent: don't locate such equipment (that can be climbed on top of) any closer than 36 inches from the outside of the pool wall.

However, as this section is located in the General Regulations chapter, the clear zone requirement applies to all pool types, including in-ground pools and spas that are required to have a separate barrier such as a fence. Although the requirement for not locating pool equipment in close proximity (less than 36 inches) to outside of the barrier (fence) is no less important, the possible locations of the barrier (fence) on the lot where the pool or spa is located creates enforcement difficulties. For example, where the barrier (fence) is located on one or more lot lines, the pool or spa owner has no legal control (over his neighbor) as to what the neighbor might place (within 36 inches) of the outside of the barrier (fence) nor can the code official enforce this code section on the neighbor (who is not the permit holder.) This has resulted in some building departments requiring that any pool (or spa) barriers (fences) be set back from any lot line by 36 inches so that pool owner (the lot owner) has the legal control over the 36 inch strip between the lot line and the pool barrier (fence.) The unfortunate results of this are: 1) for small lots, pools (or spas) cannot be as large or might not be feasible to build, 2) adjacent neighbors having pools will each have a barrier (fence) resulting in an unusable 6 feet wide strip of land between the fences, or 3) the presence of existing "permanent structures" on adjacent (neighboring) lots may preclude the installation of a pool or spa.

The original intent of the section was never intended to address any situation that was outside the confines of the lot on which the pool or spa is installed or constructed. Therefore, the revised language specifically addresses the required clearance with respect to pool equipment on the lot and not anything that is on the neighbor's side of the lot lines.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal will not increase the cost of construction because no additional labor, materials, equipment, appliances or devices are mandated beyond what is currently required by the code.

Internal ID: 524

SP7-18

ISPSC: 305.2.4.1 (New), 305.2.10

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

305.2.4.1 Setback for mesh fences. The inside of a mesh fence shall be not closer than 20 inches (508mm) to the nearest edge of the water of a pool or spa.

Delete without substitution:

~~**305.2.10 Poolside barrier setbacks.** The pool or spa side of the required barrier shall be not less than 20 inches (508 mm) from the water's edge.~~

Reason:

This proposal clarifies the original intent of section 305.2.10, which was to apply only to mesh fences, which are removable child barriers otherwise known as "baby barriers." The setback requirement was never intended to apply to walls, screen enclosures, other types of fencing, etc. The way the code is currently written it could be construed as applying to all types of barriers and not just the mesh fencing as intended. Therefore, this proposal simply deletes section 305.2.10 and then places this setback requirement as a subsection of the mesh fencing section, so it is applicable to only that type of barrier fence, as was always the original intent of this language.

Bibliography:

See 6th edition (2017) Florida Building Code, Section R4501.17.1.13 and any previous editions, which provide this language for mesh barriers:

R4501.17.1.13

Removable child barriers must be placed sufficiently away from the water's edge to prevent a young child or medically frail elderly person who may manage to penetrate the barrier from immediately falling into the water. Sufficiently away from the water's edge shall mean no less than 20 inches (508 mm) from the barrier to the water's edge. Dwelling or nondwelling walls including screen enclosures, when used as part or all of the "barrier" and meeting the other barrier requirements, may be as close to the water's edge as permitted by this code.

See 2007 Florida Building Code, Commentary for what was then section R4101.17.1.13, which provides commentary that clearly notes the intent of the setback is only for mesh fencing.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This will not increase the cost of construction, as it simply clarifies the original intent of the code provision.

Internal ID: 1754

SP8-18

ISPS: 305.3, 305.3.1, 305.3.2, 305.3.3, 305.3.4 (New), 305.4

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

2018 International Swimming Pool and Spa Code

Revise as follows:

305.3 Gates—Doors and gates. ~~Access—Doors and gates in barriers shall comply with the requirements of Sections 305.3.1 through 305.3.3 and shall be equipped to accommodate a locking device. Pedestrian access doors and gates shall open outward away from the pool or spa, shall be self-closing and shall have a self-latching device.~~

305.3.1 Utility or service doors and gates. ~~Gates—Doors and gates not intended for pedestrian use, such as utility or service doors and gates, shall remain locked when not in use.~~

305.3.2 Double or multiple doors and gates. ~~Double doors and gates or multiple doors and gates shall have not fewer than one leaf secured in place and the adjacent leaf shall be secured with a selflatching device. The gate and barrier shall not have openings larger than $\frac{3}{4}$ inch (12.7 mm) within 18 inches (457 mm) of the latch release mechanism. The self-latching device shall comply with the requirements of Section 305.3.3.~~device.

Delete and substitute as follows:

305.3.3 Latches. ~~Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from grade, the release mechanism shall be located on the pool or spa side of the gate not less than 3 inches (76 mm) below the top of the gate, and the gate and barrier shall not have openings greater than $\frac{3}{4}$ inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.~~

305.3.3 Latch release. For doors and gates in barrier, the door and gate latch release mechanisms shall be in accordance with the following:

1. Where door and gate latch release mechanisms are accessed from the outside of the barrier and are not of the self-locking type, such mechanism shall be located above the finished floor or ground surface in accordance with the following:
 - 1.1. At public pools and spas, not less than 52 inches (1219 mm) and not greater than 54 inches (1372 mm).
 - 1.2. At residential pools and spas, not less 54 inches (1372 mm)
2. Where door and gate latch release mechanisms are of the self-locking type such as where the lock is operated by means of a key, an electronic opener or the entry of a combination into an integral combination lock, the lock operation control and the latch release mechanism shall be located above the finished floor or ground surface in accordance with the following:
 - 2.1. At public pools and spas, not less than 34 inches and not greater than 48 inches (1219 mm).
 - 2.2. At residential pools and spas, at not greater than 54 inches (1372 mm).
3. At private pools, where the only latch release mechanism of a self-latching device for a gate is located on the pool and spa side of the barrier, the release mechanism shall be located at a point that is at least 3 inches (76 mm) below the top of the gate.

Add new text as follows:

305.3.4 Barriers adjacent to latch release mechanisms. Where a latch release mechanism is located on the inside of a barrier, openings in the door, gate and barrier within 18 inches (457 mm) of the latch, shall not be greater than $\frac{1}{2}$ inch (12.7 mm) in any dimension.

Revise as follows:

305.4 Structure wall as a barrier. Where a wall of a dwelling or structure serves as part of the barrier and where doors, gates or windows provide direct access to the pool or spa through that wall, one of the following shall be required:

1. Operable windows having a sill height of less than 48 inches (1219 mm) above the indoor finished floor, ~~doors and doors-gates~~ shall have an alarm that produces an audible warning when the window, door or their screens are opened. The alarm shall be *listed* and *labeled* as a water hazard entrance alarm in accordance with UL 2017.
2. In dwellings ~~or structures~~ not required to be Accessible units, Type A units or Type B units, the operable parts of the alarm deactivation switches shall be located at not less than 54 inches (1372 mm) or more above the finished floor.
3. In dwellings ~~or structures~~ that are required to be Accessible units, Type A units or Type B units, the operable parts of the alarm deactivation switches shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the finished floor.
4. In structures other than dwellings, the operable parts of the alarm deactivation switches shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1220 mm) above the finished floor.
- ~~2-5.~~ A safety cover that is *listed* and *labeled* in accordance with ASTM F1346 is installed for the pools and spas.
- ~~3-6.~~ An *approved* means of protection, such as self-closing doors with self-latching devices, is provided. Such means of protection shall provide a degree of protection that is not less than the protection afforded by Item 1 or 2.

Reason:

Section 305.3.3 deals with latches for all gates providing access to a pool. Section 305.4 deals with alarms for doors and windows in a barrier. The current text seems to be applicable more for residential pools than public pools.

There are several reason for this proposal. Pools can be interior or exterior, so latch provisions should apply to doors as well as gates. The last sentence of 305.3.2 is not needed since Section 305.3 requires compliance with the whole section. Section 305.3.3 is dealing with a situation where you reach over a gate to open the latch. Fences around public pools are typically much higher. The requirements for latches should follow the IBC Section 1010.1.9.2. This section includes an exception for operable parts of manual latches to be above 48" so that they latch is outside the reach of children.

Section 305.4 Item 1 deals with the deactivation switch for alarms on doors or windows in a pool barrier. The same allowance for height protection for children is permitted. Dwelling units are separated from structures because this wall could be on a common corridor or in another building for pools that serve hotels, apartment buildings or other community buildings. In public areas these alarm shut offs must be accessible or addressed as employee only elements under Section 1103.2.2.

2018 IBC

1010.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

Exception: Access doors or gates in barrier walls and fences protecting pools, spas and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finished floor or ground, provided the self-latching devices are not also self-locking devices operated by means of a key, electronic opener or integral combination lock.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This is a clarification of the height for pool latches and alarms only. There is no change to the cost for construction.

Internal ID: 551

SP9-18

ISPSC: 305.3.3, 305.4

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Revise as follows:

305.3.3 Latches. ~~Where Operable parts of the latch release mechanism of for the self-latching device is located that are located on the side of the gate away from the pool or spa shall be located not less than 54 inches (1372 mm) from grade, the release mechanism shall be above the finished floor or ground, whichever is higher. For public pools and public spas, such latch release shall be located at 54 inches (1372 mm) above the finished floor or ground, whichever is higher. For residential pools and residential spas, where the latch release of the self-latching device is located on the pool or spa side of the gate and is less than 54 inches (1372 mm) above the finished floor or ground, the latch release shall be located not less than 3 inches (76 mm) below the top of the gate, and the gate and barrier shall not have openings greater than 1/2 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.~~ latch release.

305.4 Structure wall as a barrier. Where a wall of a dwelling or structure serves as part of the barrier and where doors or windows provide direct access to the pool or spa through that wall, one of the following shall be required:

1. Operable windows having a sill height of less than 48 inches (1219 mm) above the indoor finished floor and doors shall have an alarm that produces an audible warning when the window, door or their screens are opened. The alarm shall be *listed* and *labeled* as a water hazard entrance alarm in accordance with UL 2017. ~~In dwellings or structures dwelling units not required to be Accessible units, Type A units or Type B units, the operable parts of the alarm deactivation switches shall be located 54 inches (1372 mm) or more above the finished floor. In dwellings or structures dwelling units required to be Accessible units, Type A units or Type B units, or in structures where the swimming pool is required to be accessible, the operable parts of the alarm deactivation switches shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the finished floor.~~
2. A *safety cover* that is *listed* and *labeled* in accordance with ASTM F1346 is installed for the pools and spas.
3. An *approved* means of protection, such as self-closing doors with self-latching devices, is provided. Such means of protection shall provide a degree of protection that is not less than the protection afforded by Item 1 or 2.

Reason:

The intent of the changes is to coordinate locking arrangements on gates and doors to public pools with the allowances worked out in the IBC as part of the coordination with ADA. At the same time, the language is being proposed to ensure that the latch is not under 54 inches, as this should not be permitted for safety reasons (all existing barrier codes and standards require a minimum 54 inches from the ground or floor to ensure a child cannot access the pool or spa without adult supervision). The definition for public pool and residential pool would determine where accessibility is appropriate.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal will not increase the cost of construction because no additional labor, materials, equipment, or devices are mandated beyond what is currently required by the code.

Internal ID: 1782

SP10-18

ISPSC: 305.8 (New)

Proponent: Timothy Pate, representing Colorado Chapter Code Change Committee (tpate@broomfield.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

305.8 Means of Egress. Outdoor public pools provided with barriers shall have means of egress as required by Chapter 10 of the International Building Code.

Reason:

I am proposing to add this new section that will give direction for outdoor public pools provided with barriers to have means of egress as required by Chapter 10 of the IBC. This will give direction as to how to figure out occupant loads along with required size and location of exits from pool and pool area. It will give direction for when you need doors or gates to swing in direction of travel and have panic hardware (when occupant load is 50 or more).

This is important in order to provide a safe exit system in the event of a weather event of possible chemical leak from pool chemical storage areas that may be adjacent to the pool areas.

I attempted to put language into section 305.3 during the 2015 code change cycle to calculate occupant load using the IBC and you would need to meet exit requirements from IBC for swing and panic hardware. The Committee had concerns that this would apply to both public and private pools and could also limit exits to only gates and not doors.

I brought it back to final action hearings by adding a new section in 305 and adding language to only apply to public pools.. I was not successful getting the required 2/3 vote to overturn the Committee recommendation for disapproval.

I would also clarify that this proposal is not adding any requirements to use the occupant load to determine required number of plumbing fixtures - only for means of egress requirements. Sections 403 and 410 have requirements for determining bather loads for Class B and C pools.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal is just to clarify existing code requirements

Internal ID: 1181

SP11-18

ISPSC: 307.1.2.1 (New), Chapter 11

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

307.1.2 Colors and finishes. For other than *residential* pools and *residential* spas, the colors, patterns, or finishes of the pool and spa interiors shall not obscure objects or surfaces within the pool or spa.

307.1.2.1 Interior finishes. The interior finish coating on floors and walls shall be comprised of a non-pigmented white or pastel cementitious binder component together with a sand/aggregate component. The finish coating shall have an overall dry lightness level (CIE L* value) of 80.0 or greater and an overall wet luminous reflectance value (CIE Y value) of 50.0 or greater, as determined by test results provided by the manufacturer, utilizing testing methodology from ASTM D4086, ASTM E1477 and ASTM E1347.

Add new standard(s) follows:

ASTM

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

D4086 - 92a(2012):

Standard Practice for Visual Evaluation of Metamerism

E1477 - 98a(2017):

Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers

E1347 - 06(2015):

Standard Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry

Reason:

This proposal creates a quantifiable standard for allowable public pool and spa surface colors. The dry Lightness (CIE L* value) represents the whiteness of the dry finish surface when compared on a grey scale, where 0 = black and 100 = white. The wet Luminous Reflectance Value (CIE Y value) represents the brightness and/or contrast of the wet finish surface as a perceived visual response of the human eye. While neither value is a true representation, knowing both values allows additional insight into the finishes true aesthetic characteristics when placed in a water-submersion environment.

Bibliography:

Section 454.1.2.4 of the 6th edition (2017) Florida Building Code

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

A finish is always required; this just puts parameters on what finishes are allowed; therefore, it does not increase the cost.

Analysis: A review of the standard proposed for inclusion in the code, ASTM D4086 - 92a(2012), ASTM E1477 - 98a(2017), and ASTM E1347 - 06(2015) with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 2360

SP12-18

ISPSC: 307.1.2.1 (New)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

307.1.2 Colors and finishes. For other than *residential* pools and *residential* spas, the colors, patterns, or finishes of the pool and spa interiors shall not obscure objects or surfaces within the pool or spa.

Add new text as follows:

307.1.2.1 Munsell Color Value. Finishes shall be not less than 6.5 on the Munsell color value scale.

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

1. Competitive lane markings.
2. Floors of dedicated competitive diving wells.
3. Step or bench edge markings.
4. Pools shallower than 24 inches (609.6 mm).
5. Water line tiles.
6. Wave and surf pool depth change indicator tiles.
7. Depth change indicator tiles where a rope and float line is provided.
8. Features such as rock formations, as approved.

Reason:

The Munsell color system looks at color purity, hue, and lightness to assign a value. This change will provide additional guidance on finish requirements for public pools and spas that will ensure consistency with the same requirements found in the Model Aquatic Health Code and in various state public pool codes regulated by health departments. This system is also used in other industries.

Bibliography:

Sections 4.5.11.1.1 - 4.5.11.1.3 of the Model Aquatic Health Code

<https://www.cdc.gov/mahc/editions/current.html>

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

A finish is always required; this just puts parameters on what finishes are allowed; therefore, it does not increase the cost.

Internal ID: 1519

SP13-18

ISPSC: 307.1.4, Chapter 11

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

2018 International Swimming Pool and Spa Code

Revise as follows:

307.1.4 Accessibility. An accessible route to public pools and spas shall be provided in accordance with the International Building Code. Accessibility within public pools and spas shall be provided as required by the accessible recreational facilities provisions of the International Building Code. Pool and spa lifts providing an accessible means of entry into the water shall be listed and labeled in accordance with UL 60335-2-1000 and be installed in accordance with ICC A117.1 and NFPA 70.

Add new standard(s) follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062

60335-2-1000:

Standard for Household and Similar Electrical Appliances: Particular Requirements for Electrically Powered Pool Lifts, with revisions through September 29, 2017

Reason:

Accessibility to public pools and spas is required by the American Disabilities Act and the International Building Code. Underwriters Laboratories (UL) has developed a new ANSI standard for pool and spa lifts that provides electrical and mechanical loading requirements, and complies with the prescriptive requirements in ANSI/ICC A117.1.

This proposal is submitted by the ICC Plumbing/Mechanical/Gas Code Action Committee (PMG CAC). The PMG CAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance the International Codes or portions thereof that were under the purview of the PMG CAC. In 2017 the PMG CAC held one face-to-face meeting and 11 conference call meetings. Numerous interested parties attended the committee meetings and offered their input.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal will not increase the cost of construction because no additional labor, materials, equipment, appliances or devices are mandated beyond what is currently required by the code.

Analysis: A review of the standard proposed for inclusion in the code, UL 60335-2-1000 September 29, 2017, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 558

SP14-18

ISPSC: 105.1, 307.2.5 (New), Chapter 11

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

307.2.5 Plaster. The plastering of pools and permanently installed concrete spas shall be in accordance with APSP/NPC/ICC-12.

Revise as follows:

[A] 105.1 When required. Any owner, or owner's authorized agent who desires to construct, enlarge, alter, repair, move, or demolish a pool or spa or to erect, install, enlarge, alter, repair, remove, convert or replace any system, the installation of which is regulated by this code, or to cause any such work to be performed, shall first make application to the code official and obtain the required permit for the work. A permit shall not be required for replastering or resurfacing of an existing pool or spa.

Add new standard(s) follows:

APSP

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The Association of Pool & Spa
Professionals
2111 Eisenhower Avenue, Suite 500
Alexandria VA 22314

ANSI/APSP/NPC/ICC 12 - 16:

American National Standard for the Plastering of Swimming Pools

Reason:

The Association of Pool & Spa Professionals, in conjunction with the National Plasters Council and ICC have developed the ANSI/APSP/NPC/ICC-12 American National Standard for the Plastering of Swimming Pools. This Standard provides clear requirements when plastering a swimming pool or a permanently installed concrete spa, in both residential and commercial settings. A proposal to add it to the reference standard list will also occur during the Group B cycle.

Plastering is the final coating applied to the shell of a concrete pool or spa. White is the most common, but it can be tinted to other colors by using pigmented aggregate. Pool plaster adds a watertight seal and makes the surface of the pool smoother for contact with swimmers than the underlying rough concrete shell. The pool plaster is a key element for the aesthetic and overall enjoyment of the pool or spa and this standard will ensure that it is applied properly.

The addition of the language under Section 105.1 is to ensure that there is no confusion as to how this standard would be applied upon its adopting into the ISPSC. The intent of the standard was never to require a permit for a replaster of an existing pool or spa; rather, it is for new construction.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal will not increase the cost of construction; rather, it will help ensure a proper plaster was put on the pool, decreasing the costs to consumers associated with having to redo a bad plaster job.

Analysis: A review of the standard proposed for inclusion in the code, APSP/NPC/ICC-12- 16, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 1758

SP15-18

ISPSC: 311.3, 311.3.1 (New), 311.3.2 (New)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Revise as follows:

311.3 Water velocity. The water velocity in return lines suction and return piping shall comply with either Section 311.3.1 or 311.3.2. The water velocity in copper and copper alloy piping shall not exceed 8 feet-fps (2.4 m) per second. The mps). All water velocity in suction piping shall be as required by Section 310. calculations shall be based on the design flow rate specified for each recirculation system.

311.3.1 Public pools and spas. For public pools and spas, suction piping water velocity shall not exceed 6 fps (1.8 mps) and return piping water velocity shall not exceed 8 fps (2.4 mps).

311.3.2 Residential pools and spas. For residential pools and spas, the water velocity in suction piping and return piping shall not exceed 8 fps (2.4 mps).

Reason:

The proposed changes clarify water velocity related requirements by locating them in one location, Section 311.3.

Return piping water velocity limits are addressed in Section 311.3 of all versions of the ISPSC code, while suction piping water velocity limits are addressed in APSP 7 - 2006 (referenced in ISPSC-2012 only), but not APSP 7 - 2013 (referenced by ISPSC 2015 and 2018).

This was a technical reference glitch associated with the transfer of APSP-16, standard for suction outlet fitting assemblies moving from the American Society of Mechanical Engineers (ASME) to the Association of Pool and Spa Professionals (APSP). The suction piping water velocity provided in this proposal did not change and remains consistent with ANSI/APSP-1, -2, -3 and -5, pool and spa construction standards as well as the CDC's Model Aquatic Health Code (MAHC).

Cost Impact

The code change proposal will increase the cost of construction .

This proposal will increase the cost of construction because additional labor and materials beyond what is currently required by the code. Specifically, in some cases, the suction piping might have to be larger in order to control the velocity through the suction piping.

Internal ID: 1763

SP16-18

ISpsc: 316.2, TABLE 316.2, TABLE 316.2(2) (New), 316.4, 316.6, 316.6.1, 316.6.2, 316.6.3 (New), Chapter 11

Proponent: Michael Savage, representing Code Compliance Action Committee (msavage@rrnm.gov)

2018 International Swimming Pool and Spa Code

Revise as follows:

316.2 ~~Listed and labeled~~ Certification. Heaters and hot water storage tanks shall be listed and labeled in accordance with the applicable standard indicated in Table 316.2(1). Hot water heating systems and components shall comply with the applicable standard ~~listed indicated in Table 316.2-316.2(2).~~

**TABLE 316.2(1)
WATER HEATERS**

DEVICE	STANDARD
Electric water heater	UL 1261, UL 1563 or CSA C22.2 No. 218.1
Gas-fired water heater	ANSI Z21.56/CSA 4.7a
Heat pump water heater	UL 1995, AHRI 1160, CSA C22.2 No. 236

Add new text as follows:

**TABLE 316.2(2)
WATER HEATING SYSTEMS AND COMPONENTS**

SYSTEM	STANDARD
<u>Solar water heater</u>	<u>ICC/APSP 902/SRCC 400</u>

316.4 Installation. Heaters shall be installed in accordance with the manufacturer's specifications and the International Fuel Gas Code, International Mechanical Code, International Energy Conservation Code, NFPA 70 or International Residential Code, as applicable in accordance with Section 102.7.1. ~~Solar thermal-water heaters-heating systems~~ shall be installed in accordance with Section 316.6.

316.6 ~~Solar thermal-water heaters-heaters systems.~~ Solar thermal heaters-water heating systems utilized for pools and spas shall comply with Sections 316.6.1 through ~~316.6.2-316.6.3.~~

316.6.1 Installation. Solar thermal water heaters shall be installed in accordance with the International Mechanical Code or International Residential Code, as applicable in accordance with Section 102.7.1.

316.6.2 ~~Collectors and panels.~~ Certification of collectors. Solar thermal collectors ~~and panels~~ shall be listed and labeled in accordance with ICC 901/SRCC 100 ~~or ICC 900/SRCC 300.~~ ~~Collectors and panels shall be permanently marked with the manufacturer's name, model number, and serial number. Such markings shall be located on each collector in a position that is readily viewable after installation of the collector or panel.~~

316.6.3 Marking of Collectors and modules. Solar thermal collectors and photovoltaic modules shall be permanently marked with the manufacturer's name, model number, and serial number. Such markings shall be located on each collector in a position that is readily viewable after installation.

Add new standard(s) follows:

ICC

International Code Council, Inc.
500 New Jersey Avenue, NW 6th
Floor
Washington DC 20001

ICC 902/APSP 902/SRCC 400-2018:

Solar Pool and Spa Heating System Standard

Reason:

SRCC has recently completed a standard titled ICC/APSP 902/SRCC 400 (“SRCC 400”), Solar Pool and Spa Heating System Standard. This standard addresses full solar pool heating systems, not just the collectors. Previously the code cited ICC 901/SRCC 100 for solar thermal collectors and ICC 900/SRCC 300 for systems. While ICC 900/SRCC 300 included solar pool heating systems in its scope, they were not addressed in the 2015 edition. Therefore, no standards were in place for solar pool heating systems (except the collectors) in the ISPSC. The insertion of the new standard fills this gap and removes ICC 900/Standard 300, which does not contain any material for pools.

The new standard also addresses a wide range of safety topics related to these systems including material compatibility, high temperature and suction entrapment safety. These are of particular importance since solar pool heating systems are often retrofitted to existing pools and spas, and therefore are not integrated by the original recirculation system designer. It is critical to ensure that they do not degrade the performance or safety of the pool itself, or introduce new hazards.

The SRCC 400 standard allows for the use of solar water heating using photovoltaic modules. These modules are electrical rather than thermal. As a consequence, the term “solar thermal water heaters” has been replaced with the universal phrase “solar water heating systems” throughout the proposal. The new term addresses both thermal and photovoltaic systems in a manner consistent with the standard. Additionally, the term “panel” has been changed to more universal term “module” to properly refer to these devices.

Exiting Table 316.2 has been re-cast as two separate tables. New Table 316.2(1) (modified existing table 316.2) proposes to reference the appropriate standards for factory-built, appliance-type water heaters that can be wholly listed and labeled to demonstrate compliance. In contrast, new Table 316.2(2) addresses water heating systems with solar water heaters, which are generally, but not always, site-assembled. Heat exchangers, a component of water heating systems, are addressed in Table 316.2(2) along with the reference to the new SRCC 400 standard.

The titles of Sections 316.2 and 316.6.2 have been changed to make each consistent with terminology used in the ISPSC, specifically Section 1001.4. Section 316.6 is modified to reflect the use of SRCC 400. Section 316.6 also has been broken into multiple sections to enhance clarity.

Cost Impact

The code change proposal will increase the cost of construction .

Any costs of certification will be borne by the heater and collector manufacturers. This may marginally increase the cost of heaters and panels. Pool system manufacturers participated in the creation of the standard and are aware of the potential certification cost implications.

Analysis: A review of the standard proposed for inclusion in the code, ICC 902/APSP 902/SRCC 400-2018, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 1383

SP17-18

ISPSC: Table 316.2, Chapter 11

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

2018 International Swimming Pool and Spa Code

Revise as follows:

**TABLE 316.2
WATER HEATERS**

DEVICE	STANDARD
Electric water heater	UL 1261, UL 1563 or CSA C22.2 No. 218.1
Gas-fired water heater	ANSI Z21.56/CSA 4.7a
Heat exchanger	AHRI 400
Heat pump water heater	AHRI 1160 <u>and one of the following:</u> UL 1995, CSA C22.2 No. 236 <u>or</u> <u>UL/CSA 60335-2-40</u>

Add new standard(s) follows:

UL

UL LLC
333 Pfingsten Road
Northbrook IL 60062

UL/CSA 60335-2-40-17:

Standard for Safety for Household and Similar Electrical Appliances - Safety - Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers.

Reason:

The UL Standard for Safety for Heating and Cooling Equipment, UL 1995 will be phased out by the year 2020, and will be replaced by UL 60335-2-40, the Standard for Safety for Household and Similar Electrical Appliances, Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers. UL 60335-2-40 is harmonized with requirements in Canada and Europe. These requirements include provisions for the most current technology and use of flammable refrigerants, and is currently being used to list new products.

The word "or" is added where there are multiple standards for different types of heaters, because only one standard needs to be used, except for AHRI 1160. AHRI 1160 is a performance standard, not a safety standard.

Reference:

[http://ahrinet.org/App_Content/ahri/files/standards%20pdfs/ANSI%20standards%20pdfs/ANSI_AHRI_Standard_1160_\(I-P\)-2014.pdf](http://ahrinet.org/App_Content/ahri/files/standards%20pdfs/ANSI%20standards%20pdfs/ANSI_AHRI_Standard_1160_(I-P)-2014.pdf)

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

For new products, there will not be a cost increase. For existing products, manufacturers will need to have those products evaluated to the new requirements.

Analysis: A review of the standard proposed for inclusion in the code, UL 60335-2-40-17, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2018.

Internal ID: 429

SP18-18

ISPSC: 317.1

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

317.1 General. This section applies to devices and systems that induce or allow air to enter ~~pools and~~ spas either by means of a powered pump or passive design.

Reason:

As originally written the ISPSC was allowing devices and systems that induce or allow air to enter pools. Air that is entrained in the water obscures the visibility into the water as light is refracted.

While air is allowed in spas, the depth of spas is more closely regulated and the patrons are intended to be walking into and seated while the spa is in use. Generally the duration of the air is also limited by a timer at which point visibility into the spa is returned as the air dissipates.

Where hydrotherapy jets have been installed in pools it has been observed that the air introduced through the jets can obscure the visibility into large portions of the pool and the jets typically never shut down. The patrons may be able to walk or depending on the depth they may need to swim. It has been observed that the hydrotherapy jets in pools can induce a current making it difficult for young children to safely return to the side/handhold of the pool.

In the definition of air induction system it means a system where air is introduced into hollow ducting built into a spa floor, bench, or hydrotherapy jets. A pool was not included in the definition of an air induction system.

Cost Impact

The code change proposal will decrease the cost of construction .

This proposal would strike "pool" from the general requirements for air blower and air induction systems. This aligns the code requirements with the definition. This would decrease the construction cost by the cost of the air blowers or air induction system which vary significantly based by the size and scope of the project from several hundred dollars to tens of thousand of dollars.

Internal ID: 1408

SP19-18

ISPSC: 319, 319.2, 508, 508.1

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Revise as follows:

SECTION 319 SANITIZING EQUIPMENT AND CHEMICAL FEEDERS

319.2 Chemical feeders. ~~Where installed, chemical~~ Public pools and spas shall be equipped with chemical feed equipment such as flow-through chemical feeders, electrolytic chemical generators, mechanical chemical feeders, chemical feed pumps, and automatic controllers that are listed and labeled in compliance with NSF 50. Chemical feed systems shall be installed in accordance with the manufacturer's specifications. Chemical feed pumps shall be wired so that they cannot operate unless there is adequate return flow to disburse the chemical throughout the pool or spa as designed.

Delete without substitution:

~~SECTION 508 SANITIZING, OXIDATION EQUIPMENT AND CHEMICAL FEEDERS~~

~~508.1 Automatic controllers.~~ ~~Where an automatic controller is installed on a spa or hot tub for public use, the controller shall be installed with an automatic pH and an oxidation reduction potential controller *listed and labeled* in compliance with NSF 50.~~

Reason:

The changes clarify that chemical feeder systems are required in public pools and spas and what type of systems are allowed. The change then removes what is found in Chapter 5 as it would contradict the new language in Section 319.

The addition of the chemical feeder requirement is consistent with the Model Aquatic Health Code.

Bibliography:

See section 4.7.3 of the Model Aquatic Health Code

<https://www.cdc.gov/mahc/editions/current.html>

Cost Impact

The code change proposal will increase the cost of construction .

For jurisdictions that do not currently require chemical feed systems in public pools and spas, this would increase the cost by requiring such systems.

Internal ID: 1526

SP20-18

ISPSC: 321.2.3

Proponent: John Kelly, representing self (john.kelly@idph.iowa.gov)

2018 International Swimming Pool and Spa Code

Revise as follows:

321.2.3 Underwater lighting. Underwater lighting shall provide not less than 8 horizontal foot-candles (8 lamp lumens per square foot) [86 lux] at the pool water surface area, or not less than a total wattage of $\frac{1}{2}$ watt/ft² (5.4 watts/m²) of pool water surface for incandescent underwater lighting where the fixtures and lamps are rated in watts/area.

Exception: The requirement of this section shall not apply where overhead lighting provides not less than 15 foot-candles (15 lumens per square foot) [161 lux] of *maintained illumination* at the pool water surface, the overhead lighting provides visibility, without glare, of all areas of the pool, and the requirements of Section 321.2.2 are met or exceeded.

Reason:

It is unnecessary and inconsistent to provide separate requirements (watts/sqft) for incandescent lighting versus (lamp lumens/sqft) for other forms of lighting as both incandescent lighting and other forms of lighting (i.e. LED lighting) are rated based on the light output of the lamp in lumens. Historically the total installed wattage of the underwater lighting was used as it was more easily measured, but as more efficient lighting (i.e. LED's, etc.) have become available the light output of the lamps in lumens has replaced requirements based on wattage as the light output is more relevant.

As originally written in the code, the requirement for the underwater lighting establishes a minimum lighting level in footcandles at the pool water surface. Overhead lighting is designed to provide a minimum lighting level (i.e. footcandles) at the pool water surface, as a significant amount of the light directed at the water surface penetrates the water surface to light the bottom and sides of the pool. Please note however that the underwater lighting is already located below the water surface and it is undesirable to direct the underwater lighting at the water surface, rather it is designed to be directed at the pool walls and the bottom of the pool. The design for underwater lighting is not based on a minimum light level (i.e. footcandles) at the water surface, rather it is designed based on the total installed lamp output in lumens divided by the area of the pool in square feet and is generally provided through multiple lights positioned evenly around the pool to light the walls and floor of the swimming pool. The requirement should be updated to avoid confusion and require a minimum total lamp lumens of the installed underwater lighting divided by the total water surface area in square feet.

As examples, the Bibliography refers to underwater lighting requirements in the Model Aquatic Health Code (MAHC) and Iowa Swimming Pool and Spa rules.

Bibliography:

Iowa Administrative Code-Swimming Pools and Spas

https://idph.iowa.gov/Portals/1/userfiles/120/641_15.pdf Page 35, Para. (2),k,(1)

2016 Model Aquatic Health Code

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf> Page 87 Para. 4.6.1.5.1

Cost Impact

The code change proposal will decrease the cost of construction .

The code as written would require more lighting as it is requiring 8 footcandles (lumen per square foot) at the water surface rather than simply a total of 8 lamp lumens per square foot of pool water surface area. The intent of underwater lighting is not to light the water surface, rather the lighting should be directed at the pool walls and bottom.

Internal ID: 1439

SP21-18

ISPSC: 322.3.1

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Revise as follows:

322.3.1 Wall clearance. There shall be a clearance of not less than 3 inches (76 mm) and not greater than ~~6~~4 inches (~~152~~101.6 mm) between the pool wall and the ladder.

Reason:

This change is being proposed to address safety concerns, as a smaller opening will help prevent arms and legs from getting stuck behind the rails. The 4 inch max standard is the same for railings, fences, playground equipment, etc.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This change should not increase or decrease the cost of construction as some manufacturers of ladders will only have to make a small adjustment to the design of their product so that when the product is installed, the ladder can comply with the revised maximum allowance of wall clearance.

Internal ID: 1518

SP22-18

ISPSC: SECTION 202, 202 (New), SECTION 324 (New), 324.1 (New), 324.2 (New), 324.3 (New), 324.4 (New), 324.5 (New), 324.6 (New), 324.7 (New), 324.7.1 (New), 324.7.2 (New), 324.7.2.1 (New), 324.8 (New), 324.8.1 (New), 324.8.1.2 (New), 324.8.2 (New), 324.8.2.1 (New), 324.8.2.2 (New), 324.8.2.3 (New), 324.9 (New), 324.9.1 (New), 324.9.2 (New), 324.10 (New), 324.11 (New), 324.12 (New)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

SECTION 202 DEFINITIONS

Add new definition as follows:

CHEMICAL STORAGE SPACE A space in an aquatic facility used for the storage of pool or spa chemicals such as acids, salt, or corrosive or oxidizing chemicals.

EQUIPMENT ROOM A space intended for the operation of pool pumps, filters, heaters, and controllers. This space is not intended for the storage of hazardous pool or spa chemicals.

INDOOR AQUATIC FACILITY A physical place that contains one or more pools or spas and the surrounding bather and spectator/stadium seating areas within a structure that meets the definition of building in the International Building Code. It does not include equipment, chemical storage, or bather hygiene rooms or any other rooms with a direct opening to the aquatic facility. Also known as a natatorium.

Add new text as follows:

SECTION 324 EQUIPMENT ROOMS

324.1 General. The provisions of this section apply to public pools and spas and aquatic recreation facilities.

324.2 Requirements. The equipment area or room floor shall be of concrete or other suitable material having a smooth slip resistant finish and have positive drainage, including a sump drain pump, if necessary. Floors shall have a slope toward the floor drain and/or sump drain pump adequate to prevent standing water at all times. The opening to the equipment room or area shall be designed to provide access for all anticipated equipment. At least one hose bibb with backflow preventer shall be located in the equipment room or be accessible within an adequate distance of the equipment room so that a hose can service the entire room.

324.3 Construction. The size of the equipment room or area shall provide working space to perform routine operations and equipment service. Equipment rooms also intended for storage shall have adequate space provided for such storage, without reducing the working spaces. Equipment rooms or areas shall be lighted to provide 30 foot candles (323 lux) of illumination at floor level.

324.4 Electrical. All electrical wiring shall be installed in accordance with NFPA 70.

324.5 Ventilation. Equipment room ventilation shall address:

1. Combustion requirements,
2. Heat dissipation from equipment,
3. Humidity from surge or balance tanks,
4. Ventilation to the outside, and
5. Air quality.

324.6 Markings. All piping in the equipment room shall be permanently identified by its use and the pool or spa it serves. Identification shall be provided for:

1. Main drains and skimmer lines,
2. Filtered water,
3. Make-up water,

4. Chlorine (or disinfection) feeds,
5. Acid (or pH) feeds,
6. Compressed air lines,
7. Gutter lines,
8. Chemical sample piping, and
9. Pool heating lines.

All piping shall be marked with directional arrows as necessary to determine flow direction and all valves shall be clearly identified by number with a brass tag, plastic laminate tag or permanently affixed alternate. Valves shall be described as to their function and referenced in the operating instruction manual.

324.7 Separation from Chemical Storage Spaces. Combustion equipment, air-handling equipment, and electrical equipment shall not be exposed to air contaminated with corrosive chemical fumes or vapors. Spaces containing combustion equipment, air handling equipment, and/or electrical equipment and spaces sharing air distribution with spaces containing such equipment shall not be used as chemical storage spaces at the same time unless the equipment is listed and labeled for use in that atmosphere. Spaces containing combustion equipment, air handling equipment, or electrical equipment and spaces sharing air distribution with spaces containing such equipment shall be isolated from chemical storage space air.

324.7.1 Doors and openings. A door or doors shall not be installed in a wall between such equipment rooms and an interior chemical storage space. There shall be no ducts, grilles, pass-throughs, or other openings connecting such equipment rooms to chemical storage spaces, except as permitted by the International Fire Code. Spaces containing combustion equipment, air-handling equipment, and/or electrical equipment and spaces sharing air distribution with spaces containing such equipment shall be isolated from indoor aquatic facility air unless the equipment is listed for the atmosphere. There shall be no ducts, grilles, pass-throughs, or other openings connection such spaces to an indoor aquatic facility. Ducts which connect the indoor aquatic facility to the duct connections of air handlers shall not be construed as connecting the air-handler space to the indoor aquatic facility unless HVAC equipment is rated for indoor aquatic facility atmosphere and serves only that indoor aquatic facility. Where building construction leaves any openings or gaps between floors and walls, or between walls and other walls, or between walls and ceilings, such gaps shall be permanently sealed against air leakage.

324.7.2 Indoor Aquatic Facility Access. Where a door or doors are installed in a wall between an equipment room and an indoor aquatic facility, the floor of the equipment room shall slope back into the equipment room in such a way as to prevent any equipment room spills from running under the door into the indoor aquatic facility. This requirement shall be accomplished by one of the following:

1. A floor all of which is at least 4 inches below the level of the nearest part of the indoor aquatic facility floor.
2. A continuous dike not less than 4 inches high located entirely within the equipment room, which will prevent spills from reaching the indoor aquatic facility floor.

324.7.2.1 Automatic closer and lock. A door between an equipment room and an indoor aquatic facility shall be equipped with an automatic closer and automatic lock. The door, frame, and automatic closer shall be installed so as to ensure that the door closes completely and latches without human assistance. The automatic lock shall require a key or combination to open from the indoor aquatic facility side. The lock shall be designed and installed to be opened by one hand from the inside of the room under all circumstances, without the use of a key or tool. Such doors shall be equipped with permanent signage warning against unauthorized entry. All sides of such doors shall be equipped with a gasket. The gasket shall be installed to prevent the passage of air, fumes, or vapors when the door is closed.

324.8 Chemical storage space. A least one space dedicated to chemical storage space shall be provided to allow safe storage of pool and spa chemicals. In all chemical storage spaces, an emergency eyewash station shall be provided. The construction of a chemical storage space shall take into account foreseeable hazards and protect the stored materials against tampering, wild fires, unintended exposure to water and the transfer of fumes into any interior space of a building intended for occupation. Any walls, floors, doors, ceilings, and other building surfaces of an interior chemical storage space shall join each other tightly. If chemicals are to be stored outdoors, they shall be stored in a well-ventilated protective area with an installed barrier to prevent unauthorized access. Exterior chemical storage spaces not joined to a wall of a building shall be completely enclosed by fencing that is at least 6 feet high. Fencing shall be equipped with a self-closing and self-latching gate having a permanent locking device.

324.8.1 Chemical storage space doors. All doors opening into chemical storage spaces shall be equipped with

permanent signage:

1. Warning against unauthorized entry, and
2. Specifying the expected hazards, and
3. Specifying the location of the associated safety data sheet forms, and
4. Product chemical hazard NFPA chart.

Where a single door is the only means of egress from a chemical storage space, the door shall be equipped with an emergency-egress device. Where a chemical storage space door must open to an interior space, spill containment shall be provided to prevent spilled chemicals from leaving the chemical storage space and the door shall not open to a space containing combustion equipment, air-handling equipment, or electrical equipment.

324.8.1.2 Interior opening. Where a chemical storage space door must open to an interior space, such door shall have all of the following requirements:

1. Constructed of corrosion-resistant materials.
2. Equipped with a corrosion-resistant, automatic lock to prevent unauthorized entry.
 - 2.1. Such lock shall require a key or combination to open from the outside into the chemical storage space.
 - 2.2. Such lock shall be designed and installed as to be capable of being opened by one hand from the inside of the chemical storage space without the use of a key or tool.
3. Supported on corrosion-resistant hinges, tracks, or other supports.
4. Equipped with suitable gaskets or seals on the top and all sides to minimize air leakage between the door and the door frame.
5. Equipped with a floor or threshold seal to minimize air leakage between the door and the floor or threshold.
6. Equipped with an automatic door closer that will completely close the door and latch without assistance and close the door completely against the specified difference in air pressure.
7. Equipped with a limit switch and an alarm that will sound if the door remains open for more than 30 minutes. The alarm shall have a minimum output level of 85 dbA at 10 feet.

324.8.2 Interior chemical storage spaces. There shall be no transfer grille, pass-through grille, louver, or other device or opening that will allow air movement from the chemical storage space into any other interior space of a building intended for occupancy or into another chemical storage space. Interior chemical storage spaces that share any building surface with any other interior space shall be equipped with a ventilation system that operates continuously and insures that all air movement is from all other interior space and toward the chemical storage space. Interior chemical storage spaces that share an electrical conduit system with any other interior space shall be equipped with a ventilation system that operates continuously and insures that all air movement is from all other interior spaces and toward the chemical storage space. This pressure difference shall be maintained by a continuously operated exhaust system used for no other purpose than to remove air from that one chemical storage space. Where more than one chemical storage space is present, a separate exhaust system shall be provided for each chemical storage space. The exhaust airflow rate shall be the amount specified in the International Mechanical Code. The function of this exhaust system shall be monitored continuously by an audible differential-pressure alarm system which shall sound if the specified differential air pressure is not maintained for a period of thirty minutes. This alarm shall have a minimum output level of 85 dbA at 10 feet and shall require manual reset to silence it.

324.8.2.1 Air ducts in interior chemical storage spaces. No duct shall allow air movement from the chemical storage space into any other interior space of a building intended for occupation or into any other chemical storage space. Air ducts shall not enter or pass through an interior chemical storage space unless it is a corrosion-resistant duct used for no other purpose than to exhaust air from the chemical storage space. This corrosion-resistant duct must exhaust to the exterior and must end at a point on the exterior of the building, at least 20 feet from any air intake for breathing air, cooling air, or combustion air. A duct used for no other purpose than to supply makeup air to the chemical storage area shall be acceptable. This makeup air supply duct must end at a point on the exterior of the building, at least 20 feet from any air intake for breathing air, cooling air, or combustion air. Any other ducts specifically allowable by the International Mechanical Code where such ducts are corrosion-resistant and joint-free to the extent feasible shall be acceptable.

324.8.2.2 Pipes and tubes in interior chemical storage spaces. Pipes and tubes shall not enter or pass

through an interior chemical storage space.

Exceptions:

1. As required to service devices integral to the function of the chemical storage space, such as pumps, vessels, controls, freeze protection, and safety devices.
2. As required to allow for automatic fire suppression.
3. As required for drainage.

Piping, tubes, drain bodies, grates, and attachment and restraint devices shall be corrosion-resistant and rated for the chemical environment(s) present including floor drain bodies and grates. All wall penetrations shall be sealed air-tight and commensurate with the rating of the wall assembly. Sealing materials shall be compatible with the wall assembly and the chemical environment(s) present.

324.8.2.3 Combustion equipment in interior chemical storage. No combustion device or appliance shall be installed in a chemical storage space, or in any other place where it will be exposed to the air from a chemical storage space.

Exceptions: A combustion device or appliance which meets all of the following requirements shall be acceptable:

1. The device or appliance is required for one or more processes integral to the function of the room, such as space heat, and
2. The device is listed for such use, and
3. The device as installed is approved.

324.9 Ozone rooms. An ozone equipment room shall not be used for storage of chemicals, solvents, or any combustible materials, other than those required for the operation of the recirculation and ozone generating equipment. Rooms which are designed to include ozone equipment shall be equipped with an emergency ventilation system capable of 6 air changes per hour. The exhaust intake shall be located 6 inches from the floor, on the opposite side of the room from the make-up air intake. The emergency ventilation system shall be so arranged as to run on command of an ozone-leak alarm or on command of a manual switch. The manual emergency ventilation switch shall be located outside the room and near the door to the ozone room. Ozone rooms which are below grade shall be equipped with force-draft ventilation capable of 6 changes per hour. The exhaust intake shall be located 6 inches from the floor, on the opposite side of the room from the make-up air intake. Such ventilation shall be so arranged as to:

1. Run automatically concurrent with the ozone equipment and for at least a time allowing for 15 air changes after the ozone equipment is stopped,
2. Run upon activation of the ozone detection and alarm system, and
3. Run on command of a manual switch.

The manual ventilation switch shall be located outside the room and near the door to the ozone room.

324.9.1 Signage. In addition to the signs on all chemical storage areas, a sign shall be posted on the exterior of the entry door, stating "DANGER - GASEOUS OXIDIZER -- OZONE" in lettering not less than 4 inches high.

324.9.2 Alarm system. Rooms containing ozone generation equipment shall be equipped with an audible and visible ozone detection and alarm system. The alarm system shall consist of both an audible alarm capable of producing at least 85 decibels at 10 feet distance and a visible alarm consisting of a flashing light mounted in plain view of the entrance to the ozone-equipment room. The ozone sensor shall be located at a height of 18-24 inches above floor level. The ozone sensor shall be capable of measuring ozone in the range of 0-2 ppm. The alarm system shall alarm when the ozone concentration equals or exceeds 0.1 ppm in the room. Activation of the alarm system shall shut off the ozone generating equipment and turn on the emergency ventilation system.

324.10 Gaseous chlorination space. Use of compressed chlorine gas shall be prohibited for new construction and after substantial alteration to existing facilities.

324.11 Windows. When installed in an interior wall, ceiling, or door of a chemical storage space, such window shall have the following components:

1. Tempered or plasticized glass,
2. A corrosion-resistant frame, and
3. Incapable of being opened or operated.

When installed in an exterior wall or ceiling, such window shall:

1. Be mounted in a corrosion-resistant frame and
2. Be so protected by a roof, eave, or permanent awning as to minimize the entry of rain or snow in the event of window breakage.

324.12 Sealing and blocking materials. Materials used for sealing and blocking openings in an interior chemical storage space shall:

1. Minimize the leakage of air, vapors, or fumes from the chemical storage space,
2. Be compatible for use in the environment, and
3. Commensurate with the fire rating assembly in which they are installed.

Reason:

The ISPSC has no detailed requirements for equipment rooms, chemical storage facilities, etc. The proposal provides the requirements found in the Model Aquatic Health Code in order to have consistency between the codes.

Further, major aspects of public pool and spa, and aquatic recreational facility construction are missing in the current ISPSC. Providing these types of additions may encourage a jurisdiction that currently finds the public pool portion of the ISPSC as deficient, to adopt this code in its entirety.

Bibliography:

Section 4.9 of the Model Aquatic Health Code

<https://www.cdc.gov/mahc/editions/current.html>

Cost Impact

The code change proposal will increase the cost of construction .

If a jurisdiction does not already have equipment and chemical storage room requirements for public facilities, then these changes could increase the cost of construction.

Internal ID: 1528

SP23-18

ISPSC: 324 (New), 324.1 (New), Chapter 11

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

324 INDOOR AIR QUALITY

324.1 General. Indoor pool and spa air handling system design, construction, and installation shall comply with ASHRAE 62.1.

Add new standard(s) follows:

ASHRAE ASHRAE 62.1-2016 Ventilation for Acceptable Air Quality

Reason:

By requiring air handling systems to be designed and installed in compliance with ASHRAE Standard 62.1 2013, Ventilation for Acceptable Indoor Air Quality, an indoor pool or spa will have minimum ventilation rates to ensure the indoor air quality is acceptable to human occupants so to minimize adverse health effects.

This also provides consistency with the Model Aquatic Health Code published by the Centers for Disease Control and Prevention, which requires compliance with the ASHRAE Standard when addressing indoor pool or spa air handling systems.

Bibliography:

See sections 4.2.2.3.3 & 4.6.2 of the Model Aquatic Health Code, which reference and require compliance with the ASHRAE 62.1 Standard.

<https://www.cdc.gov/mahc/editions/current.html>

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The code change proposal will not increase or decrease the cost of construction because these indoor pool facilities already have to meet the ASHRAE 62.1 Standard. This simply aligns the ISPSC with what is already required via other codes, including the MAHC.

Analysis: The referenced standard, ASHRAE 62.1-2016, is currently referenced in the 2018 IMC.

Internal ID: 1514

SP24-18

ISPSC: 402.13, 402.14

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

402.13 Ladders ~~Stairways~~ for diving equipment. ~~Ladders Stairways shall be provided with two grab rails or two handrails. There shall be a uniform distance between ladder treads, with a 7-inch to access diving equipment. Stair riser heights shall be 7 inches (178 mm) minimum distance and a 12-inch (305 mm) maximum distance. maximum and 4 inches (102 mm) minimum with a minimum tread depth of 11 inches. Handrails shall be provided with a handrail height measured vertically from the leading edge of tread nosing of not less than 34 inches (864 mm) and not more than 38 inches (965 mm). Guards shall be located along open sided stairs. Required guards shall not be less than 42 inches (1067 mm) high measured vertically from the leading edge of tread nosing. Required guards shall not have openings which allow passage of a sphere 4 inches (102 mm) in diameter from the walking surface to the required guard height.~~

Exception: ~~The distance between treads for the top and bottom riser can vary but shall be not less than 7 inches (178 mm) and not greater than 12 inches (305 mm).~~

Exception: Diving boards shall be permitted to be accessed to by a ladder provided that the diving board is located not greater than 39 inches (1000 mm) above the deck and the ladder has two grab rails or two handrails.

402.14 Springboard fall protection guards. ~~Springboards located at a height greater than 5-feet-39 inches (1524-1000 mm) above the pool deck shall have a fall protection guard on each side of the springboard. The design and the selection of the materials of construction of the fall protection guards shall be determined by the manufacturer of the springboard support structure. The installation and maintenance of the fall protection guards shall be in accordance with the fall protection guard manufacturer's instructions. springboard to the point at which the board cantilevers over the water. Required guards shall be not less than 42 inches (1067 mm) high measured vertically from the diving board surface. Required guards shall not have openings which allow passage of a sphere 4 inches (102 mm) in diameter from the diving board to the required height.~~

Reason:

Fixed vertical ladders are not an appropriate method for access to 3 meter diving stands. They present an unreasonable and unnecessary risk of injury due to falls from the ladders and boards to the concrete swimming pool deck below contributing to deaths and other significant injuries particularly among children.

Ladders should not be used without proper footwear and/or if wet or contaminated with oils. Aquatic environments are generally wet the patrons are barefoot and their bodies are often covered by oils (i.e. sunscreen).

Fixed ladder use is typically restricted to areas that allow access by worker for maintenance such as roof access, radio masts, wind turbines, industrial machines, and underground shafts and pits.

The International Building Code only allows a fixed lass as one of two required exits at heliports, boiler, incinerator and furnace rooms and also for egress at stage (technical production areas) and for emergency escape from a window well.

The DOL recognizes the hazards associated with falls from ladders and prohibit young workers (14 and 15 years olds) from jobs requiring the use of ladders.

The CPSC recognized injuries associated with falls from diving boards and in 1996 set up a meeting with industry representatives to encourage the industry to consider voluntary standards requiring the use of resilient surfacing similar to that found in playground standards.

ASTM standards relating to aquatic facilities such as ASTM F2376 (Waterslides) and ASTM F2461 (Aquatic Play

Equipment) require stairs or ramps complete with guardrails and handrails to provide access and egress from platforms that are more than 21 inches above the surrounding terrain.

Two attachments have been included. One of the attachments includes news articles of injuries or deaths associated with falls from ladders leading to 3 meter diving boards or from the boards themselves to the pool deck below. The second attachment provides an expanded presentation of the specific hazards associated with vertical ladders.

Bibliography:

See the attachments for any articles or studies referenced

Cost Impact

The code change proposal will increase the cost of construction .

There is an added cost to requiring stairways in lieu of ladders to access diving boards. The cost will may be offset over time by reduced insurance claims and lawsuits associated with significant injuries and deaths associated with falls from the ladders.

Internal ID: 1358

SP25-18

ISPSC: 405.7 (New)

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Add new text as follows:

405.7 Barrier. Where a wading pool is within 50 feet of a swimming pool, the wading pool shall have a barrier separating the wading pool from the swimming pool. Such barrier shall comply with Sections 305.2.1 through 305.7.

Reason:

The intent of a wading pool is to provide young non-swimmers access to recreational water of a depth they can stand in and that does not require swimming. Direct access to swimming pools by these young non-swimmers increase the risk of drowning.

Where a wading pool is adjacent to a swimming pool they should be separated by sufficient distance to intercept a child before reaching the swimming pool and/or a physical barrier to prevent the child from reaching the swimming pool.

The Iowa Swimming Pool and Spa Rules (see Bibliography) requires that if a wading pool is within 50 feet of a swimming pool the wading pool shall have a barrier separating it from the swimming pool. These separation distances or physical barriers restrict the young non-swimmers from accessing the swimming pool to reduce the risk of drowning.

The ISPSC should adopt requirements establishing a minimum separation distance and/or physical barriers between swimming pools and wading pools.

Bibliography:

Iowa Administrative Code

Swimming Pools and Spas

https://idph.iowa.gov/Portals/1/userfiles/120/641_15.pdf Page 34, Para. (5),i,(4)

Cost Impact

The code change proposal will increase the cost of construction .

Providing a barrier or increasing the separation distance between a wading pool and an adjacent swimming pool will increase the cost of construction to reduce the risk of drowning among young non-swimmers.

Internal ID: 1799

SP26-18

ISPSC: 407.3 (New), 407.3.1 (New)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

407.3 Continuous water removal. The design of a gutter system shall accommodate continuous removal of water from the pool's upper surface at a rate of not less than 125 percent of the required total recirculation flow rate as determined by the design professional.

407.3.1 Gutter outlets. At a gutter flow condition of not less than 125 percent of the total recirculation flow as determined by the design professional, gutter outlets such as drop boxes, converters, return piping, or flumes shall be designed to prevent flooding of the gutter that would result in skimmed water re-entering the pool.

Reason:

A value of 125 percent of the total recirculation flow rate chosen by the designer is recommended for hydraulic flexibility. As patrons swim, play, dive and splash, they create waves that exceed the normal recirculation one might see when the pool is empty. Upsizing the gutter system allows capture of the waves without flooding the gutter, which would make the gutter ineffective. This does not apply to suction piping. Proposed 407.3 and 407.3.1 only apply to gutter systems.

This is consistent with the requirements found in the Model Aquatic Health Code and many state public pool code requirements.

Bibliography:

See sections 4.7.1.4.2.1 and 4.7.1.4.3 of the Model Aquatic Health Code

<https://www.cdc.gov/mahc/editions/current.html>

Cost Impact

The code change proposal will increase the cost of construction .

In a jurisdiction that does not already require gutter systems to follow this design criteria, it could increase the cost, but this simply aligns with requirements found in many jurisdictions today.

Internal ID: 1525

SP27-18

ISPSC: 407.3 (New), 407.3.1 (New), 407.3.2 (New), 407.3.3 (New), 407.3.4 (New)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

407.3 Pool circulation. The filtration circulation system shall be designed with sufficient flexibility to achieve a hydraulic apportionment that will ensure effective distribution of treated water throughout the pool.

407.3.1 Inlets. Effective distribution of treated water shall be accomplished by either a continuous perimeter overflow system with integral inlets or by means of directionally adjustable inlets adequate in design, number, and location.

407.3.2 Adequate mixing. Pools shall have wall or floor inlets or both to provide for adequate mixing. Inlets shall be hydraulically sized to provide the design flow rates for each area of the pool proportional to the turnover rate and the area covered by the inlet.

407.3.3 Floor inlets. Floor inlets shall be required for pools that are greater than 50 feet (15.2 m) width. The spacing between floor inlets shall not exceed 20 feet (6.1 m). Pools having only floor inlets shall have such inlets located within 15 feet (4.6 m) of the perimeter waterline. Where wall inlets are used in combination with floor inlets, the floor inlets shall be located not greater than 25 feet (7.6 m) from the nearest side walls.

407.3.4 Wall inlets. The spacing between wall inlets shall not exceed 20 feet (6.1 m), measured along the perimeter water line.

Reason:

The ISPSC public pool requirements do not currently include detailed guidelines for assuring adequate in-pool distribution of sanitizers and filtered water. The proposal provides directional inlet requirements found in APSP-15 and additional spacing details from the Model Aquatic Health Code in order to have consistency between the codes and APSP standards.

Further, this is a major aspect of public pool circulation system performance missing in the current ISPSC. Providing these types of additions may encourage a jurisdiction that currently finds the public pool portion of the ISPSC as deficient, to adopt this code in its entirety.

Bibliography:

Section 4.7.1.3 of the Model Aquatic Health Code

<https://www.cdc.gov/mahc/editions/current.html>

Cost Impact

The code change proposal will increase the cost of construction .

The proposal will increase the cost of construction where a jurisdiction does not already have inlet spacing requirements that require as many inlets as this new language requires.

Internal ID: 2324

SP28-18

ISPSC: 409.5 (New), 409.5.1 (New)

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Add new text as follows:

409.5 Rope and float line. A rope and float line shall be provided for all of the following situations:

1. Separation of activity areas
2. Identification of a break in floor slope at water depths of less than 5 ft (1524 mm).
3. Identification of a water depth greater than 3 ft (914 mm).
4. Identification of a water depth greater than 5 ft (1524 mm).

409.5.1 Location. The rope and float line shall be located 1 foot (305 mm) toward the shallow end in each location.

Reason:

As currently written it does not appear that the ISPSC has any requirements for rope and float lines at pools public pools regulated under Chapter 4. The ISPSC does require rope and float lines in pools regulated under Chapter 6 and in residential pools regulated under Chapter 8.

Rope and float lines are a common safety element required in swimming pools to mark a change of pool floor slope, and to segregate different users, activities, and water depths. The proposal is based on adding requirements to Chapter 4 that are similar to the requirements for pools regulated under Chapter 6.

This includes a float line to mark the separation of activity areas, to mark a break in floor slope at water depths of less than 5 ft, to mark water depth greater than 3 ft, and to mark the transition to deep water at 5 ft.

The float lines at 3 ft and 5 ft mark the limits of the water depths at which most drowning incidents in pools occur (see attachment). The float line at 3 ft provides a visible physical marker to aid parents and lifeguards keeping children in water depths more appropriate to their size and abilities.

Cost Impact

The code change proposal will increase the cost of construction .

Adding float lines will slightly increase the cost of construction.

Internal ID: 1661

SP29-18

ISPSC: 410.1

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

410.1 Toilet Dressing space, cleansing showers and toilet facilities. ~~Class A and B pools~~ Cleansing showers and toilet facilities shall be provided with toilet facilities having the required number of plumbing fixtures in accordance with Section 609 and shall be installed in accordance with the International Building Code or the International Plumbing Code. A dressing space or room shall be provided. Cleansing showers and dressing spaces shall be either separate from or within toilet facilities.

Exception: Pools accessory to dwelling units or sleeping units of Group R-1 or R-2 occupancies shall not be required to be provided with dressing areas or cleansing showers.

Reason:

As currently written it appears the ISPSC does not reference the minimum required plumbing fixtures of the IBC/IPC, rather it only is referencing only the plumbing fixtures found within toilet facilities. This would leave out other relevant requirements such as drinking fountains and service sinks. The requirements of the IBC/IPC are the appropriate requirements for the minimum required plumbing fixtures and are based on the occupancy type and design occupant load and are widely accepted, applied, and proven across many different jurisdictions for various occupancy type and design occupant loads. The ISPSC should remain consistent with the requirements of the IBC/IPC for the minimum number of plumbing fixtures.

For some reason while it appears that the requirement for showers has been included for Aquatic Recreation Facilities under Chapter 6 it appears it has been omitted for competition pools, public pools, and instruction, play, or therapy pools under Chapter 4. Given that many patrons share a common body of water in swimming pools, in addition to the plumbing fixtures required by the IBC/IPC, it is appropriate to require both cleansing showers and rinse showers to reduce the transmission of recreational water illnesses and to reduce the development of chloramines. The requirement for showers at public pools under Chapter 4 and aquatic recreational facilities under Chapter 6 should be consistent as they present similar risks. It is appropriate to allow pools serving living units (i.e. hotels, apartments, etc.) to be exempt from the requirement for dressing areas and cleansing showers as the patrons can take a cleansing shower and get dressed in the comfort and privacy of their living unit on-site. (The IBC Group Classifications for R-1 and R-2 are shown at the end of this reason statement.)

The Model Aquatic Health Code (MAHC) provides requirements for the number of cleansing showers under section 4.10.4.2.1 and rinse showers under section 4.10.4.3.1. As the number of showers are related to health concerns associated with transmission of recreational water illnesses and the health effects associated with chloramines, the ISPSC should be changed to be consistent with the requirements of the MAHC in relation to the minimum number of showers required. A separate proposal aligned the number of required showers for Aquatic Recreational Facilities with the requirements of the Model Aquatic Health Code. This proposal ensures that requirements remain consistent between Chapter 4 and Chapter 6.

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

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

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

- Apartment houses
- Congregate living facilities (nontransient)* with more than 16 occupants
 - Boarding houses (nontransient)*
 - Convents
 - Dormitories*
 - Fraternities and sororities
 - Monasteries
- Hotels (nontransient)
- Live/work units*
- Motels (nontransient)
- Vacation timeshare properties

Cost Impact

The code change proposal will increase the cost of construction .

The proposal will increase the cost of construction at facilities that did not already provide showers for their swimming pools. Showers at competitive pools, public pools, instructional and therapy pools are needed to reduce the risk for transmission of recreational water illnesses and the development of chloramines.

Internal ID: 1673

SP30-18

ISPSC: 411.2.1, 411.2.2, 411.2.3

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

411.2.1 Tread dimensions and area. Treads shall be not less than 24 inches (607 mm) wide at the leading edge. Treads shall have an unobstructed surface area of not less than ~~240-264~~ square inches (~~0.154-0.170~~ m²) and ~~an a~~ uniform unobstructed horizontal depth of not less than ~~10-11~~ inches (~~254-279~~ mm) ~~at the centerline.~~

411.2.2 Risers. Risers, except for the bottom riser, shall have a uniform height of not greater than ~~12-7~~ inches (~~305-178~~ mm) and not less than 4 inches (102 mm) measured at the centerline. The bottom riser height is allowed to vary to the floor.

411.2.3 Top tread. The vertical distance from the pool coping, deck, or step surface to the uppermost tread shall be not greater than ~~12-7~~ inches (~~305-178~~ mm).

Reason:

The tread riser heights and tread depths requirements in the ICC IBC & ISPSC are inconsistent. The tread riser heights allowed in the ISPSC are excessive and the allowable tread depths have been reduced from that found in the IBC which together will increase the risks of slips, trips, and falls at the stairs in swimming pools and spas.

The 12 in. riser height currently allowed in the ISPSC far exceeds the 7 in riser maximum height found in the ICC and even exceeds the maximum 9.5 in. riser height allowed by OSHA under 1910.25(c)(2) for walking and working surfaces in general industry.

A study (see attachment) on stairway falls has found that risers higher than 7.5 in. require excessive energy for most people to climb and may increase loss of balance when descending. This is compounded by reduced tread depths and a lack in uniformity of the tread riser heights and tread depths.

For swimming pools and spas this is further compounded due to the reduce friction available at the stairs due to their wetted condition and potential for biofilm and/or algae growth on the stairs themselves.

The requirements relating to the stair riser heights and tread depths within the ISPSC shall be changed to be consistent with the requirements found in the IBC. The 12 in. maximum riser height currently allowed in the ISPSC is excessive and will contribute to injuries from slips, trips, and falls at swimming pool and spa stairs particularly among children, elderly, and overweight patrons.

Bibliography:

Cohen, J., LaRue, C. S., & Cohen, H. H. (2009). Stairway falls: An ergonomics analysis of 80 cases. Professional Safety, 54, 1, 27-32.

<http://www.nsc.org/ConventionsDocuments/TSCE/Tools-Resources/Stairway-Falls-Cohen.pdf>

OSHA

https://www.osha.gov/pls/oshaweb/owadis.show_document?p_table=STANDARDS&p_id=9717 Para. 1910.25(b)(3)

Cost Impact

The code change proposal will increase the cost of construction .

Reducing the tread riser height and increasing the tread depth will theoretically increase the number of treads required by code and the associated cost. In practice the tread risers and tread depths commonly observed in new public swimming pools and spas more closely match that as proposed rather than those allowed in the ISPSC so I would anticipate minimal cost impact for all but the smallest spas.

Internal ID: 140

SP31-18

ISPSC: 411.1.3

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

411.1.3 Deep area. The means of entry and exit in the deep area of pools shall consist of one of the following:

1. Steps/stairs.
2. Ladders.
3. Grab rails with recessed treads.
4. Ramps. Swimouts
5. ~~Beach entries.~~
6. ~~Swimouts.~~
7. ~~Other designs that provide the minimum utility as specified in this code.~~

Reason:

In deep water the ramp or beach entry would not terminate at the bottom of the pool as in shallow water, but would end at the pool wall with an abrupt drop off to the bottom of the pool in deep water. Ramps are undefined in the code. The code addresses beach entry which is defined as a sloping entry. Beach entries or sloping entries are commonly used for patrons in wheel chairs to entry the pool. If beach or sloping entries were allowed in deep water this could allow a wheel chair to drop off into the bottom of the pool in the deep water.

The requirements for shallow end beach and sloping entries are addressed under 411.3. There are no requirements listed for deep water. If the requirements of 411.3 were applied to deep water, it would require a handrail at the vertical drop as the sloping entry reached the pool wall. This would render the entry unusable as it would be blocked off. If the requirements of 411.3 were not applied to deep water, there would not be limits to the slopes of the entry or requirement that it be slip resistant which would create a slip, trip, and falls hazard.

Cost Impact

The code change proposal will decrease the cost of construction .

Beach entries or ramps would be more costly to provide entry to or exiting from deep water than stairs, ladders, recessed treads, or swimouts.

Internal ID: 1655

SP32-18

ISPSC: 411.2.5 (New)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new text as follows:

411.2.5 Outlined Edges. The leading horizontal and vertical edges of stair treads shall be outlined with slip-resistant contrasting tile or other permanent marking of not less than 1 inch (25.4 mm) and not greater than 2 inches (50.8 mm).

Reason:

Provides for additional safety for a patron when entering or exiting a public swimming pool. Conforms with the requirement found in the Model Aquatic Health Code.

Bibliography:

See section 4.5.4.2 of the Model Aquatic Health Code, <https://www.cdc.gov/mahc/editions/current.html>

Cost Impact

The code change proposal will increase the cost of construction .

A slight increase in cost could occur when providing slip-resistance contrasting tile or some other permanent marking.

Internal ID: 1517

SP33-18

ISPSC: 411.2.5 (New)

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Add new text as follows:

411.2.5 Handrails. A handrail shall be provided for each set of stairs. Stairs wider than 5 ft (1.5 m) shall have at least one additional handrail for every 12 ft (3.7 m) of stair width. Handrails at pool stairs shall comply with Section 323.2.

Reason:

Handrails are required at stairs to prevent injuries from slips, trips, and falls. Currently the ISPSC required handrails at steps on the deck but overlooked the steps into the pool. Falls are more likely on stairs leading into the pool than on the deck as currently the code allows greater riser heights and reduced tread depths on the stairs leading into the pool. This is further compounded by reduced coefficient of friction on the wetted pool stairs and on conditions that are favorable for the growth of biofilms and/or algae on pool stairs.

Requiring one handrail for each 12 ft in width was based on the requirements found in the Model Aquatic Health Code

Cost Impact

The code change proposal will increase the cost of construction .

Added a requirement for a handrail. Cost for a handrail in the neighborhood of \$200 and up depending on stair configuration. A handrail is necessary at the stairs to reduce injuries from slips, trips, and falls at the stairs.

Internal ID: 2260

SP34-18

ISPSC: 411.3.3

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

411.3.3 Surfaces. Beach and sloping entry walking surfaces at water depths up to 36 inches (914 mm) shall be ~~of slip-resistant materials~~resistant.

Reason:

Submerged walking surfaces in pools must be constructed with a slip resistant surface to reduce slips, trips and falls. The wetted walking surfaces begin with a reduced coefficient of friction and this is further compounded as conditions can be favorable for the growth of biofilms and algae. The 3 ft depth was chosen to be consistent with the requirements of the Model Aquatic Health Code (see attachment)

Bibliography:

2016 Model Aquatic Health Code

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf> Page 63 Para. 4.2.1.8

Cost Impact

The code change proposal will increase the cost of construction .

The cost will increase as more of the bottom of the pool will be required to be slipresistant. The cost is minimal as some materials of construction are naturally slipresistant but some require the addition of treatment to the finishes.

Internal ID: 2275

SP35-18

ISPSC: 411.5.1

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

411.5.1 Swimouts. ~~Swimouts, located in either the deep or shallow area of a pool, shall comply with all of the following:~~

1. The horizontal surface shall be not greater than 20 inches (508 mm) below the waterline.
2. An unobstructed surface shall be provided that is equal to or greater than that required for the top tread of the pool stairs in accordance with Section 411.2.
3. ~~Where used as an entry and exit access, swimouts~~ Swimouts shall be provided with steps and handrails that comply with the pool stair requirements of Section 411.2 and Section 411.2.323.2.
4. The leading edge shall be visibly set ~~apart~~ apart by a stripe having a width of not less than 3/4 inch (19 mm) and not greater than 2 inches (51 mm). The stripe shall be of a contrasting color to the adjacent surfaces.

Reason:

Clarified and simplified language and coordinated language for swimouts at public pools addressed under Chapter 4 and Chapter 6. Clarified the need for a handrail at the stairs from a swimout.

Cost Impact

The code change proposal will increase the cost of construction .

Added a requirement for a handrail. Cost for a handrail in the neighborhood of \$200 and up depending on stair configuration. A handrail is necessary at the steps from a swimout to reduce injuries from slips, trips, and falls at the stairs.

Internal ID: 1594

SP36-18

ISPSC: 411.5.2

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

411.5.2 Underwater seats and benches. Underwater seats and benches, whether used alone or in conjunction with pool stairs, shall comply with all of the following:

1. The horizontal surface of the bench shall be not greater than 20 inches (508 mm) below the waterline.
2. An unobstructed surface shall be provided that is not less than ~~10~~ 16 inches (406 mm) in depth and not greater than 22 inches (559 mm) in depth and not less than ~~24~~ 26 inches (660 mm) in width.
3. Underwater seats and benches shall not be used as the required for entry and exit access.
4. ~~Where underwater seats are located in the deep area of the pool where manufactured or constructed diving equipment is installed, such seats shall be located outside of the minimum diving water envelope for diving equipment. Underwater benches shall only be located in areas where the pool water depth does not exceed 5 ft (1.5 m).~~
5. The leading edge shall be visually set apart by a stripe having a width of not less than 3/4 inch (19 mm) and not greater than 2 inches (51 mm). The stripe shall be of a contrasting color to the adjacent surfaces.
6. ~~The horizontal surface shall be at or below the waterline.~~ The top surface of the bench shall be slip resistant.
7. ~~A tanning ledge or sun shelf used as the required entry and exit access shall be located not greater than 12 inches (305 mm) below the waterline.~~

Reason:

This proposal addresses dimensions of underwater seats and benches and their location. It also removes references to "tanning ledge" or "sun shelf" as they are undefined but clearly are not within the intent for of not underwater seats and benches as benches can not be used as a required entry/access where it appears based on the stricken language that the shelves are allowed to serve as an entry/exit.

It is not clear where the 10 inch bench surface originated as that would have been too small for patrons. The dimensions were updated based on anthropometric data for men and woman to ensure that dimensions of an underwater bench was large enough for patron use for seating as intended.

The proposal clarified that benches not only couldn't count toward a required point of access but that the shall not be used for entry and exits. While the surface is required to be slip resistant, the step from the bench surface to the deck it too large and there is no handrail so it would be unsafe to step to or from the deck.

The proposal also attempted to align the marking requirements for benches at public pools under Chapter 4 and Chapter 6.

Finally, the benches were restricted to a maximum pool depth of 5 feet to be consistent with the requirements of the Model Aquatic Health Code (MAHC) . The Annex of the MAHC states:

"4.5.16.3 Maximum Water Depth. The five foot (1.5 m) depth restriction is to address the potential SAFETY issue of stepping or otherwise moving off a bench into deep water. The seat depth below the water line is limited to 20 inches (50.8 cm) maximum so a non-swimmer may be comfortable at that depth but once they move from the bench into a greater water depth it may exceed their comfort and/or skill level."

Bibliography:

Excerpts from :Gordon, Claire C. et. al 1988 Anthropometric Survey of U.S. Personnel: Summary Statistics Interim Report. March 1989.

<https://multisite.eos.ncsu.edu/www-ergocenter-ncsu-edu/wp-content/uploads/sites/18/2016/06/Anthropometric->

Cost Impact

The code change proposal will increase the cost of construction .

This proposal increases the size of the benches based on anthropometric data so they better can serve their intended purpose. It also clarifies the marking required for the benches. In both cases there were cost associated with forming the bench and marking the bench so the cost associated with the clarification of the marking of the bench and the depth and width of the bench would be minimal.

Internal ID: 1592

SP37-18

ISPSC: 411.5.2

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

411.5.2 Underwater seats and benches. Underwater seats and benches, whether used alone or in conjunction with pool stairs, shall comply with all of the following:

1. The horizontal surface shall be not greater than 20 inches (508 mm) below the waterline.
2. An unobstructed surface shall be provided that is not less than 10 inches (254 mm) in depth and not less than 24 inches (607 mm) in width.
3. Underwater seats and benches shall not be used as the required entry and exit access.
4. Where underwater seats are located in the deep area of the pool where manufactured or constructed diving equipment is installed, such seats shall be located outside of the minimum diving water envelope for diving equipment.
5. The leading edge shall be visually set apart.
6. The horizontal surface shall be at or below the waterline.
7. ~~A tanning ledge or sun shelf used as the required entry and exit access shall be located not greater than 12 inches (305 mm) below the waterline.~~

Reason:

Currently a tanning ledge or sun shelf is undefined in the ISPSC. It is clear however that a tanning ledge or sun shelf is not an underwater seat or bench. As such they should not be included under the section providing requirements for underwater seat or benches. Underwater seats and benches are not designed for standing and walking and be the code shall not be used as the required entry and exit access, but as written a tanning ledge or sun shelf can be used as the required entry and exit. This is in conflict with 411.1.2 which limits the means of entry and exit from shallow water to stairs, a ramp, or a beach entry and 411.1.3.

Under 401.5 the slope of the floor in the shallow area of a pool is limited based on the pool type. While a bench is not the floor of the pool (i.e. not intended to walk on), there are a few states that allow tanning ledges or sun shelves in which the floor of the pool abruptly drops off from a depth of approximately 12 inches to depths typically ranging from 3 ft to 5 ft. This abrupt change in slope of the bottom of the pool violated the sloping requirements of 401.5, creates an unsafe walking surface, creates a visual obstruction obscuring view of the bottom of the swimming pool and the abrupt change in depth presents a drowning hazard particularly to young non-swimmers that are at the highest risk of drowning in a swimming pool. See attachment for additional information.

If a tanning ledge or sun shelf is to be included in the ISPSC, they should be defined so the intent is clear and a new section should be added with the provisions necessary to protect the safety of the patrons.

Cost Impact

The code change proposal will decrease the cost of construction .

Tanning shelves increase the cost of construction.

Internal ID: 1795

SP38-18

ISPSC: 503.2

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

503.2 Multilevel seating. Where multilevel seating is provided, the maximum water depth of any seat or sitting bench shall be ~~28-26~~ inches (~~711-660~~ mm) measured from the *design waterline* to the lowest measurable point.

Reason:

The 28 inch depth is too deep for seating. The sitting shoulder height of a 99th percentile male is only 26.16 inches and the sitting shoulder height of a 99th percentile woman is only 24.54 inches.

Bibliography:

Excerpts from :Gordon, Claire C. et. al 1988 Anthropometric Survey of U.S. Personnel: Summary Statistics Interim Report. March 1989.

<https://multisite.eos.ncsu.edu/www-ergocenter-ncsu-edu/wp-content/uploads/sites/18/2016/06/Anthropometric-Detailed-Data-Tables.pdf> Page 3

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

This proposal only sets the limit on depth of seating so there would not be an impact to the construction cost.

Internal ID: 2063

SP39-18

ISPSC: 504.2 (New)

Proponent: John Kelly, representing self (john.kelly@idph.iowa.gov)

2018 International Swimming Pool and Spa Code

Add new text as follows:

504.2 Timer. The operation of the hydrotherapy jets shall be limited by a cycle timer having a maximum setting of 15 minutes. The cycle timer shall be located not less than 5 feet away, adjacent to, and within sight of the spa.

Reason:

The ISPSC allows spas to operate at a temperature of up to 104 degrees F. The elevated temperature allowed for spas increases the risk of deaths from hyperthermia and drowning and the jet currents further increase the heat transfer rate.

A study on "The Health Hazards of Saunas and Spas and How to Minimize Them" noted that many people should limit their stays in spas to 5 or 10 minutes and that even healthy adults would be well advised not to stay in spas for more than 10 to 15 minutes.

Under Section 4.12.1.10 of the Model Aquatic Health Code the agitation system shall be connected to a timer to limit the cycle to 15 minutes. This is consistent with requirements found in many state and local health codes.

The ISPSC should recognize the risk of hyperthermia particularly with the elevated temperatures it allows for spas and given the increased heat transfer created by the hydrotherapy jets and limit the jet cycle accordingly and consistent with the Model Aquatic Health Code.

Bibliography:

The Health Hazards of Saunas and Spas and How to Minimize Them

Edward Press, MD, MPH <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1405706/pdf/amjph00208-0084.pdf>

American Journal of Public Health, August 1991, Volume 81, No. 8

2016 Model Aquatic Health Code, 2nd Edition, July 2016

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf>

Cost Impact

The code change proposal will increase the cost of construction .

The Model Aquatic Health Code and most state and local health codes already contain a requirement for a timer so for most areas there will be no added cost. In areas with no state or local requirement there would be a small cost associated with the installation of the timer. Including the requirement within the ISPSC will provide consistency in the requirements and help address the risk in those areas where no health codes are in place.

Internal ID: 178

SP40-18

ISPSC: 509.2

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

509.2 Operational signs. Operational signs shall include, but not be limited to, the following messages as required by the local jurisdiction:

1. Children under age 5 and persons using alcohol or drugs that cause drowsiness shall not use spas.
2. Pregnant women and persons with heart disease, high blood pressure or other health problems should not use spas without prior consultation with a health provider.
3. Children under 14 years of age shall be supervised by an adult.
4. Use of the spa when alone is prohibited (if no lifeguards on site).
- ~~1-5.~~ Do not allow the use of or operate spa if the suction outlet cover is missing, damaged or loose.
- ~~2-6.~~ Check spa temperature before each use. Do not enter the spa if the temperature is above 104°F (40°C).
- ~~3-7.~~ Keep breakable out of the spa area.
- ~~4-8.~~ Spa shall not be operated during severe weather conditions.
- ~~5-9.~~ Never place electrical appliances within 5 feet (1524 mm) of the spa.
- ~~6-10.~~ No diving.

Reason:

The spa signage currently required by the ISPSC does not contain any language warning those particularly vulnerable to injury or death associated with the elevated temperature of the spa.

The spa signage in the Model Aquatic Health Code (see attachment) places warnings and restrictions on those that are particularly vulnerable to the elevated temperature of a spa. The annex of the Model Aquatic Health Code notes that "Small children are still developing internal temperature regulation, and infants in particular have a small body mass compared to body surface area." It also notes that spa seating is not designed to accommodate younger children in a seated position. As such children under the age of 5 should not use a spa and children under the age of 14 should be supervised by an adult.

A study on health hazards of spas (see attachment) noted that when analyzing deaths associated with spas the chief risk factors identified were alcohol ingestion, heart disease, seizure disorders, and cocaine ingestion. These factors accounted for about 45% of the fatalities. It further noted that 61 of the 151 spa related deaths occurred in children under 12 years of age.

Bibliography:

The Health Hazards of Saunas and Spas and How to Minimize Them

Edward Press, MD, MPH <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1405706/pdf/amjph00208-0084.pdf>

American Journal of Public Health, August 1991, Volume 81, No. 8

2016 Model Aquatic Health Code

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf> Page 281, Para. 6.4.2.2.4

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The signage is already required. The proposal only changes what it stated on the sign.

Internal ID: 2084

SP41-18

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Delete without substitution:

~~**603.3 Shallow-to-deep-end rope and float line.** Where a pool has a water depth ranging from less than 5 feet (1524 mm) to greater than 5 feet (1524 mm), a rope and float line shall be located 1 foot (305 mm) horizontally from the 5-foot (1524 mm) depth location, toward the shallow end of the pool.~~

Reason:

Ropes and float line requirements are addressed under section 605.2. Creating additional rope and float line requirements in a separate section creates confusion and one or the other requirements will more likely be overlooked. Based on the requirements it appears that for type D-2 pools a rope line would be required at both 4-1/2 ft depth under 605.2.3 and 5 ft depth under 603.3. If the pool is sloping at 1 ft vertically in 12 ft horizontally there would be only 6 ft between these two required float lines.

Cost Impact

The code change proposal will decrease the cost of construction .

This proposal eliminates the duplication of the requirements for float lines which are addressed in both section 603.3 and section 605.2.

Internal ID: 1558

SP42-18

ISPSC: 605.2

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

605.2 Rope and float line. A rope and float line shall be provided for all of the following situations:

1. Separation of activity areas.
2. Identification of a break in floor slope at water depths of less than 5 feet (1524 mm).
3. Identification of a water depth greater than ~~4¹/₂~~ 3 feet (~~1372-914~~ mm) in constant floor slope in Class D-2 pools.
4. Identification of a water depth greater than 5 ft (1524 mm).

Exception: Class D-1 pools or any other pool where the ~~designer~~ code official indicates that such a ~~line is not required or that the line would constitute a hazard.~~

Reason:

Rope and float lines are a common safety element required in swimming pools to mark a change of pool floor slope, and to segregate different users, activities, and water depths. The proposal is based on combining the requirements for rope and float lines into a single section.

This includes a float line to mark the separation of activity areas, to mark a break in floor slope at water depths of less than 5 ft, to mark water depth greater than 3 ft, and to mark the transition to deep water at 5 ft.

The float lines at 3 ft and 5 ft mark the limits of the water depths at which most drowning incidents in pools occur (see attachment). The float line at 3 ft provides a visible physical marker to aid parents and lifeguards keeping children in water depths more appropriate to their size and abilities.

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

The change only combines the requirements for rope and float lines into a single section and shifts the location of one rope and float line.

Internal ID: 1556

SP43-18

ISPSC: SECTION 609, 609.1, 609.2, 609.2.1, 609.2.2, 609.3, 609.3.1, 609.3.2, 609.3.3, 609.4, 609.4.1, 609.7

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

SECTION 609 TOILET ROOMS DRESSING AND BATHROOMS SANITARY FACILITIES

609.1 General. ~~Toilet Dressing and bath sanitary~~ facilities shall be provided in accordance with the minimum requirements of the International Building Code and International Plumbing Code and Sections 609.2 through 609.9-609.9.

609.2 Number of fixtures. ~~Pools shall have toilet facilities with the number of fixtures in accordance with Section 609.2.1 or 609.2.2.~~ The minimum number of required water closets, urinals, lavatory, and drinking fountain fixtures shall be provided as required by the International Building Code and International Plumbing Code and the dressing facilities and number of cleansing and rinse showers shall be provided in accordance with Sections 609.2.1, 609.2.2, and 609.3.1.

609.2.1 Water area less than ~~7500~~ 4000 square feet. Facilities that have less than ~~7500~~ 4000 gross square feet (~~697-372~~ m²) of water area available for bather access shall have dressing facilities and not less than one water closet for males, one urinal for males, one lavatory for males, one one cleansing shower for males, two water closets for females, one lavatory for females and one cleansing shower for females.

609.2.2 Water area ~~7500~~ 4000 square feet or more. Facilities that have ~~7500~~ 4000 gross square feet (~~697-372~~ m²) or more of water area available for bather access shall have dressing facilities and not less than 0.7 water closet for males, one urinal for males, 0.85 lavatory for males, one one cleansing shower for males, two water closets for females, one lavatory for females and one cleansing shower for females for every 7500-4000 square feet (697-372 m²) or portion thereof. Where the result of the fixture calculation is a portion of a whole number, the result shall be rounded up to the nearest whole number.

609.3 Showers. Showers shall be in accordance with Sections 609.3.1 through ~~609.3.5~~ 609.3.5.

609.3.1 Deck Rinse shower. ~~Not In addition to the requirement for cleansing showers in 609.2.1 and 609.2.2, not less than one and not more than half of the total number of showers required by Section 609.2~~ rinse shower shall be located provided on the deck of or at the entrance of each pool.

Delete without substitution:

~~**609.3.2 Anti-scald device.** Where heated water is provided to showers, the shower water supply shall be controlled by an anti-scald device.~~

~~**609.3.4 Flow rate.** Each showerhead shall have a water flow of not less than 2 gallons per minute (7.6 lpm).~~

Revise as follows:

609.3.5 Temperature. At each cleansing showerhead, the heated shower water temperature shall be not less than 90°F (32°C) and not greater than 120°F (49°C). Water supplied to rinse showers shall not be required to be heated.

609.4 Soap dispensers. Soap dispensers shall be in accordance with ~~Sections 609.4.1 and 609.4.2.~~ Section 609.4.1.

609.4.1 Liquid or powder. Soap dispensers shall be provided ~~in each toilet facility, at each lavatory and cleansing shower.~~ Soap dispensers shall dispense liquid or powdered soap. Reusable cake soap is prohibited. Soap dispensers and soap shall not be provided at rinse showers.

609.7 Sanitary napkin receptacles. Sanitary napkin receptacles shall be provided in each water closet compartment for females and in the area of the cleansing showers for female use only.

Reason:

The minimum number of plumbing fixtures required by the IBC/IPC and the ISPSC are inconsistent. The requirements of the IBC/IPC are the appropriate requirements and are based on the occupancy type and design occupant load and are

widely accepted, applied, and proven across many different jurisdictions for various occupancy type and design occupant loads. The ISPSC should be change to be consistent with the requirements of the IBC/IPC.

Given that many patrons share a common body of water in swimming pools and spa, in addition to the plumbing fixtures required by the IBC/IPC, it is appropriate to require both cleansing showers and rinse showers to reduce the transmission of recreational water illnesses and to reduce the development of chloramines.

The Model Aquatic Health Code (MAHC) provides requirements for the number of cleansing showers under section 4.10.4.2.1 and rinse showers under section 4.10.4.3.1. As the number of showers are related to health concerns associated with transmission of recreational water illnesses and the health effects associated with chloramines, the ISPSC should be changed to be consistent with the requirements of the MAHC in relation to the minimum number of showers required.

Bibliography:

2016 Model Aquatic Health Code, 2nd Edition, July 2016

U.S. Department of Health and Human Services, Center for Disease Control and Prevention

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf>

Cost Impact

The code change proposal will not increase or decrease the cost of construction .

Typically Swimming Pools and Spas must already meet building code, plumbing code, and health code requirements so it will eliminate confusion caused by inconsistencies between the applicable codes but should not change the number of fixtures installed.

Internal ID: 179

SP44-18

ISPSC: 610.4.4

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

610.4.4 Slip-resistant surfaces. Beach and sloping entry walking surfaces at water depths up to ~~18~~36 inches (~~457~~914 mm) shall be slip resistant.

Reason:

Submerged walking surfaces in pools must be constructed with a slip resistant surface to reduce slips, trips and falls. The wetted walking surfaces begin with a reduced coefficient of friction and this is further compounded as conditions can be favorable for the growth of biofilms and algae.

The 3 ft depth was chosen to be consistent with the requirements of the Model Aquatic Health Code (see attachment)

Bibliography:

2016 Model Aquatic Health Code

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf> Page 63 Para 4.2.1.8

Cost Impact

The code change proposal will increase the cost of construction .

The cost will increase as more of the bottom of the pool will be required to be slip resistant. The cost is minimal as some materials of construction are naturally slip resistant but some require the addition of treatment to the finishes.

Internal ID: 2268

SP45-18

ISPSC: 610.5.1, 610.5.2, 610.5.5, 610.5.6

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

610.5.1 Uniform height of 9 inches riser height. Except for the bottom riser, risers at the centerline shall have a maximum uniform height of ~~9-7~~ inches (~~229-178~~ mm) and a minimum uniform height of 4 inches (102 mm). The bottom riser height shall be permitted to vary from the other risers.

610.5.2 Distance from coping or deck. The vertical distance from the pool coping, deck, or step surface to the uppermost tread shall be not greater than ~~9-7~~ inches (~~229-178~~ mm).

610.5.5 Tread horizontal depth. Treads shall have ~~an~~ a uniform unobstructed horizontal depth of not less than 11 inches (279 mm).

610.5.6 Tread surface area. Treads shall have an unobstructed surface area of not less than ~~240-264~~ square inches (~~0.17-0.170~~ m²).

Reason:

As currently written the stair construction requirements within pools at aquatic recreation facilities covered under Chapter 6 do not match the stair construction requirements within pools addressed under Chapter 4, and neither of these requirements match the requirements for stair construction under the IBC. These variations in stair construction increase the risks of slips, trips, and falls at pool stairs.

The 9 inch riser height in Chapter 6 exceed the 7 inch riser height found in the IBC. A study attached has found that risers higher than 7.5 in. require excessive energy for most people to climb and may increase the risk of loss of balance when descending. This is compounded by a lack of requirements for uniform tread depths in Chapter 6.

For swimming pools and spas the risk of slips, trips, and falls, due to irregularity in the stair construction is further compounded due to the reduced friction available at the stairs due to their wetted condition and potential for biofilm and/or algae growth on the stairs themselves.

The requirements relating to stair riser heights and tread depths within the ISPSC shall be changed to be consistent with the requirements found in the IBC. The irregularity of the stair construction based on the current requirements of the ISPSC will increase the risks of slips, trips, and falls associated with the pool stairs.

Bibliography:

Cohen, J., LaRue, C. S., & Cohen, H. H. (2009). Stairway falls: An ergonomics analysis of 80 cases. Professional Safety, 54, 1, 27-32.

<http://www.nsc.org/ConventionsDocuments/TSCE/Tools-Resources/Stairway-Falls-Cohen.pdf>

OSHA

https://www.osha.gov/pls/oshaweb/owadis.show_document?p_table=STANDARDS&p_id=9717 Para. 1910.25(b)(3)

Cost Impact

The code change proposal will increase the cost of construction .

Reducing the tread riser height will theoretically increase the number of treads required by code and the associated cost. In practice the tread risers and tread depths commonly observed in new public swimming pools and spas more closely match that as proposed rather than those allowed in the ISPSC so I would anticipate minimal cost impact for all but the smallest of spas.

Internal ID: 1464

SP46-18

ISPSC: 610.5.7 (New)

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Add new text as follows:

610.5.7 Handrails. A handrail shall be provided for each set of stairs. Stairs wider than 5 ft (1.5 m) shall have at least one additional handrail for every 12 ft (3.7 m) of stair width. Handrails at pool stairs shall comply with Section 323.2.

Reason:

Handrails are required at stairs to prevent injuries from slips, trips, and falls. Currently the ISPSC required handrails at steps on the deck but overlooked the steps into the pool. Falls are more likely on stairs leading into the pool than on the deck as currently the code allows greater riser heights and reduced tread depths on the stairs leading into the pool. This is further compounded by reduced coefficient of friction on the wetted pool stairs and on conditions that are favorable for the growth of biofilms and/or algae on pool stairs.

Requiring one handrail for each 12 ft in width was based on the requirements found in the Model Aquatic Health Code

Bibliography:

2016 Model Aquatic Health Code

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf> Page 71, Para 4.5.5

Cost Impact

The code change proposal will increase the cost of construction .

Added a requirement for a handrail. Cost for a handrail in the neighborhood of \$200 and up depending on stair configuration. A handrail is necessary at the stairs to reduce injuries from slips, trips, and falls at the stairs.

Internal ID: 2262

SP47-18

ISPSC: 610.6, 610.6.1, 610.6.2, 610.6.3, 610.6.4

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

610.6 Swimouts. Swimouts shall be located completely outside of the water current or wave action of the pool or spa and can be located in shallow or deep areas of water. pool.

610.6.1 Surface area. An unobstructed surface equal to or greater than that required for the top tread of the pool stairs shall be provided in accordance with Sections 610.5.5 and 610.5.6.

610.6.2 Step required. Where a swimout is used as an entry and exit access point, it shall be provided with a step that meets the pool stair requirements (see Section 610.5). steps and handrails that comply with Section 610.5 and Section 323.2.

610.6.3 Maximum depth. The horizontal surface of a swimout shall be not greater than 20 inches (508 mm) below the waterline.

610.6.4 Color marking. The leading edge of a swimout shall be visually set apart by a stripe having a width of not less than $\frac{3}{4}$ inch (19 mm) and not greater than 2 inches (51 mm). The stripe shall be of a contrasting color to the adjacent surfaces.

Reason:

Clarified and simplified language and coordinated language for swimouts at public pools addressed under Chapter 4 and Chapter 6. Clarified the need for a handrail at the stairs from a swimout.

Cost Impact

The code change proposal will increase the cost of construction .

Added a requirement for a handrail. Cost for a handrail in the neighborhood of \$200 and up depending on stair configuration. A handrail is necessary at the steps from a swimout to reduce injuries from slips, trips, and falls at the stairs.

Internal ID: 2256

SP48-18

ISPSC: 610.7, 610.7.1, 610.7.2, 610.7.3, 610.7.4, 610.7.5, 610.7.6

Proponent: John Kelly, Iowa Department of Public Health, representing self

2018 International Swimming Pool and Spa Code

Revise as follows:

610.7 Underwater seats and benches. Underwater seats and benches shall comply with this section.

610.7.1 Prohibited location. ~~Location.~~ Underwater seats shall not be located in the diving water envelope. benches shall only be located in areas where the pool water depth does not exceed 5 ft (1.5 m).

610.7.2 Surface dimensions. Underwater ~~seats~~ benches shall have an unobstructed surface dimension of not less than ~~10-16 inches (254-406 mm)~~ and not greater than 22 inches (559 mm) in depth measured front to back and not less than ~~24-26 inches (610-660 mm)~~ in width.

610.7.3 Not an entry or exit. Underwater ~~seats and benches~~ shall not be used as an entry or exit for a pool ~~but can be located in shallow or deep areas of water.~~ pool.

610.7.4 Depth. The horizontal surface of ~~seats and benches~~ shall be not greater than 20 inches (508 mm) below the waterline.

610.7.5 Color marking. The leading edge of ~~seats and benches~~ shall be visually set apart by a stripe having a width not less than $\frac{3}{4}$ inch (19 mm) and not greater than 2 inches (51 mm). The stripe shall be of a contrasting color to the adjacent surfaces.

610.7.6 Slip resistant. The top surface of ~~seats and benches~~ shall be slip resistant.

Reason:

This proposal addresses dimensions of underwater seats and benches and their location.

It is not clear where the 10 inch bench surface originated as that would have been too small for patrons. The dimensions were updated based on anthropometric data for men and woman to ensure that dimensions of an underwater bench was large enough for patron use for seating as intended.

The proposal clarified that benches not only couldn't count toward a required point of access but that they shall not be used for entry and exits. While the surface is required to be slip resistant, the step from the bench surface to the deck is too large and there is no handrail so it would be unsafe to step to or from the deck.

Finally, the benches were restricted to a maximum pool depth of 5 feet to be consistent with the requirements of the Model Aquatic Health Code.

From the ANNEX of the 2016 Model Aquatic Health Code:

"4.5.16.3 Maximum Water Depth. The five foot (1.5 m) depth restriction is to address the potential SAFETY issue of stepping or otherwise moving off a bench into deep water. The seat depth below the water line is limited to 20 inches (50.8 cm) maximum so a non-swimmer may be comfortable at that depth but once they move from the bench into a greater water depth it may exceed their comfort and/or skill level."

Bibliography:

Excerpts from: Gordon, Claire C. et. al 1988 Anthropometric Survey of U.S. Personnel: Summary Statistics Interim Report. March 1989.

2016 Model Aquatic Health Code

<https://www.cdc.gov/mahc/pdf/2016-mahc-code-final.pdf>

Cost Impact

The code change proposal will increase the cost of construction .

This proposal increases the size of the benches based on anthropometric data so they better can serve their intended purpose. It also clarifies the marking required for the benches. In both cases there were costs associated with forming the benches and marking the benches so the cost associated with the clarification of the marking of the benches and the depth and width of the benches would be minimal.

Internal ID: 1847

SP49-18

ISpsc: 202, 612 (New), 612.1 (New), 612.2 (New), 612.3 (New), 612.4 (New), 612.4.1 (New), 612.4.2 (New), 612.4.3 (New), 612.4.4 (New), 612.5 (New), 612.5.1 (New), 612.5.2 (New), 612.5.3 (New), 612.5.4 (New), 612.5.5 (New), 612.6 (New), 612.7 (New)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing Association of Pool & Spa Professionals (jhatfield@apsp.org)

2018 International Swimming Pool and Spa Code

Add new definition as follows:

INTERACTIVE WATER PLAY FEATURES. Any indoor or outdoor structure designed to allow for public recreational activities with recirculated, filtered, and treated water that includes sprayed, jetted or other water sources contacting bathers and not incorporating standing or captured water as part of the bather activity area. These installations are also known as splash pads, spray pads, and wet decks.

Add new text as follows:

612 INTERACTIVE WATER PLAY FEATURES

612.1 General. Interactive water play features shall comply with Section 612.1 through 612.7.

612.2 Safety hazards. Parts of the interactive water play feature that can be accessed by the users of the feature shall be designed and constructed to not present safety hazards to the users.

612.3 Decking. A deck of not less than 4 feet (1296 mm) in width shall be provided around the perimeter of the interactive water play feature. The deck shall be sloped away from the interactive water play feature.

612.4 Splash pad zone. The splash pad zone shall comply with Section 612.4.1 through 612.4.4.

612.4.1 Surface. Splash pad zone surfaces shall have a slip-resistant and cleanable surface. The manufacturer of manufactured zone surfaces shall certify that such surfacing is suitable for aquatic and chlorinated environments. Direct suction outlets from interactive water play features shall be prohibited.

612.4.2 Slope and water collection. Splash pad zone surfaces shall slope to one or more drain points so that only water from the splash pad zone flows back to a gravity fed collection tank. The slope shall prevent the accumulation or pooling of water and shall not exceed 1/2 inch per foot. Drain openings in the splash pad zone surfaces that can be accessed by users shall not allow a 1/2 inch (12.7 mm) diameter dowel rod to be inserted into the opening. Drain covers in splash pad zone surfaces shall be flat and flush with the zone surface and shall require tools for removal. The manufacturer of such drain covers shall certify that the covers comply with the physical testing and finger-and-limb entrapment requirements in Sections 3 and 6 respectively, of APSP 16.

612.4.3 Nozzles within the interactive water play feature splash pad zone. Nozzles that spray water from the interactive water play feature splash pad zone shall be flush with the zone surface. Openings in such nozzles shall not allow a 1/2 inch (12.7 mm) diameter dowel rod to be inserted into the opening. The water velocity from the orifice of any water nozzle shall not exceed 20 feet (6.1 m) per second.

612.4.4 Other nozzles. Nozzles, other than those on walking surfaces within the interactive water play feature splash pad zone, shall be designed to be clearly visible.

612.5 Water sanitation. The water sanitation shall consist of the equipment covered in Sections 612.5.1 through 612.5.5.

612.5.1 Water collection and treatment tank. Interactive water play features shall drain to a collection and treatment tank. The inside of the tank shall be accessible for cleaning and inspection. The access hatch or lid shall be locked or require a tool to open. The tank capacity shall be not less than 1000 gallons or ten times the number of gallons in a minute when all nozzles are operating simultaneously, whichever is greater. The volume water in the tank, at the design water level, shall not decrease more than 15% of that volume when all pumps and discharge piping fill with water to the discharge points of all nozzles. Tanks shall be provided with a means to empty all water in the tank for the purposes of servicing or cleaning.

612.5.2 Filtration pump. The filtration pump shall be sized to turnover the surge basin capacity in 30 minutes or less. The intake for the pump shall be located to draw water from the lowest elevation in the treatment tank.

612.5.3 Spray nozzle and water feature water disinfection. Spray nozzles and water features shall be supplied by water from the water collection and treatment tank that is equipped with filtration and sanitizing equipment required by Chapter 3 and this Section. Where separate water feature pumps are installed, controls shall prevent those pumps from operation when the filtration pump is not operating.

612.5.4 Disinfection system. In addition to any filtration and sanitizing equipment requirements of Chapter 3 and this Chapter, all water supplied to spray nozzles or other water that can be accessed by a user, shall pass through a secondary disinfection system before discharge to the user. The secondary disinfection system shall be listed and labeled to NSF 50 as having a single-pass, three-log reduction of the cryptosporidium surrogate.

612.5.5 Make-up water system. The water collection and treatment tank shall be provided with a make-up water system that is supplied with potable water.

612.6 Operating instructions. In addition to the documentation and instructions requirements of Chapter 1 and 3, the operating instructions for an interactive water play feature shall require that the circulation system be operated continuously for not less than 4 turnovers prior to operation of the pumps for the spray nozzles and other water features systems.

612.7 Lighting. Where a interactive water play feature will be in operation at night or during periods of inadequate natural lighting, artificial lighting shall be provided in accordance with the same requirements for pool deck area lighting in Section 321.2.2.

Reason:

In previous cycles a similar proposal has been submitted, but committee members had concerns with either the term previously proposed for these type of features or some of the requirements found within the proposal. These highly popular water play areas that are rapidly becoming an alternative to some public swimming pools in many jurisdictions across the country needs to be addressed in the ISPSC in order to provide standards on how they are built in jurisdictions that currently have none and to bring alignment with some state codes that currently have such requirements, as well as requirements in the Model Aquatic Health Code for such features.

In previous code cycles, there was no disagreement that a code language addressing these type of features is needed and we believe based on the input previously provided in past code cycles, this proposal has addressed previous concerns and aligns with industry best practices in the area of interactive water play features (also known as spray pads, splash pads, etc.).

Additional background:

Waterparks have included these attractions in their array of fun things to do for many years. As large waterparks are highly focused on safety and cleanliness of all water used at the park, regulations did not seem to be as necessary for these attractions -- the waterparks knew what to do, how to do it and have an excellent track record. However, as these types of attractions move into the public sector such as at town public parks, many people who are responsible for choosing and operating this equipment might be lacking the waterpark's knowledge about what is critical for a safe installation. Those involved in the pool and spa industry and those involved in operating public pools in jurisdictions across the country are well aware of water contamination occurrence in these type of features.

The ISPSC is the best place to install these requirements within the I-code family of codes as attractions involve circulated and filtered water (similar to what a pool or spa use) for recreational use even though such attractions do not involve users immersing themselves in bodies of water. The California Building Code as well as the Florida Building Code is reflective of many of the proposed concepts and details of the language in this proposal, and these standards exist within the pool and spa sections of their codes.

Bibliography:

Section 5.12.5 of the Model Aquatic Health Code; <https://www.cdc.gov/mahc/editions/current.html>

6th edition (2017) Florida Building Code, Section 454.1

California Building Code: Title 24, Chapter 31B Pool Code

Cost Impact

The code change proposal will increase the cost of construction .

This proposal will increase the cost of construction because additional labor, materials, equipment, and devices are mandated beyond what is currently required by the code. Specifically, the code is currently silent about these types of

attractions which means that any supplier of these attractions could provide any kind of equipment (of safe design or not). In some cases, having these regulations will make the cost of some suppliers' attraction packages be more than if they did not have to comply with these minimum safety requirements. For other suppliers, these requirements are already included in their standard packages.

Internal ID: 1770
