



**Summary of Substantive Changes
between the 2003 and the 2014 editions of
ANSI/APSP/ICC-1 “American National Standard for
Public Swimming Pools”**

Presented to the IAPMO Standards Review Committee on December 11, 2017

General: The changes to this standard may have an impact on currently listed products. The significant changes are:

- Clarified the scope and the descriptions of Class A to Class F type pools (see Section 1.1)
- Added additional requirements for diving equipment instructions, allowable location of installation outside of the minimum diving envelope and further specified dimensions in relation to Point A for determination of the minimum diving envelope (see Section 6.6)
- The maximum width of a rest ledge was reduced from 8 in to 6 in (see Section 6.7)
- Deck Equipment: Changed the requirement for the distance above the tip of a diving board (see Section 7.2)
- Added a requirement for pools to have separate dedicated filtering systems, clarified the required clarity of pool water and included allowance for NSF 14 compliance of circulation system components (see Section 8.1)
- Updated the requirements to reference standards ANSI/APSP/ICC-7 or ANSI/APSP-16.
- Added a new requirement to conduct a hydraulic pressure test on the circulation system piping (see Section 8.3).
- Updated the requirements to reference standards ANSI/APSP/ICC-7 or ANSI/APSP-16 (see Sections 11.1, 11.2, 11.3, 11.4, 11.9, 11.10, 12.2, 12.3.3).
- The requirements for grates were revised to require pool closure if any of the 5 entrapment hazards exist as follows (see Section 11.8)
- Revised the lighting requirements of indoor and outdoor pools (see Section 13)
- Changed the requirement for treatment of salvaged backwash water (see Section 16)
- Revised and updated the requirements for sanitizing equipment, chemical feeders and chemical operational parameters (see Section 17)

Section 1.1, Public swimming pools: Clarified the scope and the descriptions of Class A to Class F type pools as follows:

1.1 Public swimming pools. This standard covers public swimming pools to be used for [swimming](#), [bathing](#), [competitive activities](#), or [recreational activities](#) and operated by an owner, [lessee](#), [operator](#), [licensee](#), or [concessionaire](#), regardless of whether a fee is charged for use.

1.1.1 Public swimming pools covered by this standard. Public swimming pools covered by this standard include ~~Class A pools (pools used for competitive aquatic sports), Class B and Class C pools, (pools intended for public or semi-public recreational swimming), and Class F pools (for wading).~~ (See article 3 for definitions.) [the following](#):



[1.1.1.1 Class A pools. Any pool intended for use for accredited competitive aquatic events such as Federation Internationale De Natation \(FINA\), USA Swimming, USA Diving, USA Synchronized Swimming, USA Water Polo, National Collegiate Athletic Association \(NCAA\), National Federation of State High School Associations \(NFHS\). The use of the pool is not limited to competitive events.\)](#)

[1.1.1.2 Class B pools. Any pool, not otherwise classified, intended for public recreational use.](#)

[1.1.1.3 Class C pools. Semi-public pools. Any pool operated solely for and in conjunction with lodgings such as hotels, motels, apartments, condominiums.\)](#)

[1.1.1.4 Class F pools. Class F pools are wading pools and are covered within the scope of this standard as set forth in Sections 6.9 and 8.4.2 and as noted in other sections of the standard.](#)

Section 2, Normative references: The referenced standards were updated to the current edition, and the following standards were removed or added:

~~[ANSI/ASME A112.19.8M-1987 \(1996\), Suction fittings for swimming and wading pools, spas, hot tubs, and whirlpool bathtub appliances](#)~~

~~[ANSI/ICC A117.1 \(2003\), Standard on accessible and useable buildings and facilities](#)~~

[ANSI/APSP/ICC-7 2013 Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins](#)

[ANSI/APSP-16 2011 Standard for Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs](#)

[ANSI/NFPA 58 2014, Liquefied Petroleum Gas Code](#)

Section 3, Definitions: The following definitions were added:

[remodel: To install cosmetic changes, accessory add-ons, alterations, or modernizations to a commercial installation. See Renovate.](#)

[renovate: To restore or repair all or part of a pool structure and/or its component parts, including the rebuilding and/or replacing of worn or broken parts. See Remodel.](#)

[slip-resisting: A surface that has been so treated or constructed to significantly reduce the chance of a user slipping. The surface shall not be an abrasion hazard.](#)

Section 5.7, Accessibility for persons with disabilities: A note was added directing the reader to the ADAAG as follows:

5.7 Accessibility for persons with disabilities. For Americans with Disabilities Act (ADA) requirements for accessibility for persons with disabilities into public swimming pools, see ADA Accessibility guidelines for buildings and facilities, recreation facilities (ADAAG).

[NOTE: For ADA requirements, see U.S. ADA Accessibility guidelines \(ADAAG\). \(For more information on the U.S. Department of Justice Americans with Disabilities Act, visit the ADA web site at \[www.ada.gov\]\(http://www.ada.gov\). Some pools may be exempt from ADA. See ADA definition of public accommodation for Title II and \(Title III facilities\).](#)

Section 6.2.2, Diving Envelope: Removed the allowance to construct below the minimum dimensions specified for the Diving envelope in Table 6.2.2 as follows:



[6.2.2 Diving Envelope. Negative construction tolerances shall not be applied to the shallow dimensions of the Minimum Diving Envelope in Table 6.2.2.](#)

Section 6.3.5, Walls: Clarified the slope of pool walls as follows:

[6.3.5 Walls. Where walls join the floor the transitional point or profile shall comply with the following: Except for Class A pool walls where racing lanes terminate, walls may slope a maximum of 11° from plumb \(see Figure 6.3.5\).](#)

Section 6.4.1: Added additional organizations designating Class A pool dimensions as follows:

6.4.1 Class A pools shall be designed and constructed to provide the dimensions specified by Fédération Internationale de Natation (FINA), USA Swimming, USA Diving, [USA Synchronized Swimming, USA Water Polo, NCAA, NFHS](#), or other appropriate sanctioning body.

Section 6.6: Added additional requirements for diving equipment instructions, allowable location of installation outside of the minimum diving envelope and further specified dimensions in relation to Point A for determination of the minimum diving envelope as follows:

6.6 ~~The Manufacturer~~ [ed of the diving equipment installation and use instructions shall be provided by the diving equipment manufacturer, and shall specify the minimum water envelopes for its products dimensions required for each diving board and diving stand combination. They may shall refer to the water envelope type of their choice by dimensionally relating their products to Point "A" on that water diving envelopes as shown in Figure 6.2.2, Table 6.2.2, and Sections 6.6–6.6.1.2. Point "A" as shown in figure 1 is designated as the point of origin on the water surface for the water envelope dimension.](#)

6.6.1 Point A is ~~a point located on the water surface of pool water envelopes~~ [the point from which all dimensions of width, length, and depth are established for the Minimum Diving Water Envelope \(see Figure 6.2.2 and Table 6.2.2\). If the tip of the diving board or diving platform overhang is located at a distance of Point A or greater from the deep end wall, and the water depth at that location is equal to or greater than the water depth requirement at Point A, then the point on the water surface at the design water level directly below the center of the tip of the diving board or diving platform shall be designated as Point A.](#)

~~6.6.2 Point A is a construction location nearest the deep end wall where the minimum water depth D1 is satisfied.~~ [6.6.1.1 Location of point A. The Minimum Diving Water Envelope dimensions for pools with manufactured diving equipment shall be taken from Point A as shown in Figure 6.2.2. Point A shall be defined as the point on the water surface at the design water level where the water depth is required at Point A and is provided at a distance of Point A as shown in Figure 6.2.2 and Table 6.2.2 from the deep end wall. The center of the tip of the diving board or platform, manufactured or field fabricated, shall be located directly above Point A.](#)

~~6.6.3~~ [6.6.1.2](#) Point A, as shown in Figure ~~1~~ [6.2.2](#) and Table ~~2~~ [6.2.2](#), shall be the referenced point of origin for all dimensions defining a minimum ~~water~~ [diving](#) envelope.



6.6.2 Location of equipment and pool features in the minimum diving envelope. If the pool is designed for use with diving equipment, all steps, pool stairs, ladders, underwater benches, offset ledges, special features, and other accessory items, or any parts thereof, shall be located outside the Minimum Diving Envelope (see Figure 6.3.5).

Section 6.7, Rest ledges: The maximum width of a rest ledge was reduced from 8 in to 6 in as follows:
6.7 Rest ledges. Rest ledges along the pool walls are permitted. They shall not be less than 4 ft (122 cm) below the water surface. If a ledge is provided it shall be at least 4 in. (10 cm) wide and no more than ~~8~~ 6 in. (~~20~~ 15 cm) wide.

Section 6.9, Wading Pools: Section 11.11 was removed and requirements to include suction entrapment avoidance methods in wading pools was added as follows:
6.9.5 Suction entrapment avoidance methods for wading pools shall be in accordance with ANSI/APSP/ICC-7. Exception: Suction outlets are prohibited in wading pools.

Section 7.2, Deck Equipment: Changed the requirement for the distance above the tip of a diving board as follows:
7.2.3 ~~There shall be a completely unobstructed distance of 14 feet (427 cm) above the tip of the diving board or as specified by~~ The diving equipment manufacturer ~~or the authority having jurisdiction~~ shall specify minimum head room required above the tip of the board.

Section 8.1, System: Added a requirement for pools to have separate dedicated filtering systems, clarified the required clarity of pool water and included allowance for NSF 14 compliance of circulation system components as follows:
8.1 System. A circulation system consisting of pumps, piping, return inlets and suction outlets, filters, and other necessary equipment shall be provided for complete circulation of water. All pools shall have separate dedicated filtering systems, unless otherwise allowed by the authority having jurisdiction. Wading pools and spas shall have separate dedicated filtering systems.

8.1.1.1 Water clarity shall be maintained. (See 8.5.) ~~When standing at the pool's edge at the deep end, the main drains at the deepest portion of the pool floor shall be clearly~~ Pool water shall be of a clarity to permit an 8 in. (203 mm) diameter black and white Secchi disc or suction outlet cover (formerly called main drain) located on the bottom of the pool at its deepest point to be visible and sharply defined from any point on the deck up to 30 ft (914 cm) away in a direct line of sight from the disc or suction outlet. (Clarity is a function of proper filtration and maintenance of proper chemical operational parameters. See appendix A.)

8.1.3 Circulation system components and equipment shall comply with the ~~most recent~~ edition of ANSI/NSF 50 or NSF 14 in effect at the time of their manufacture, or alternate criteria that is acceptable by the authority having jurisdiction.



Section 8.3, Piping and fittings: Added a new requirement to conduct a hydraulic pressure test on the circulation system piping as follows:

8.3.3 Circulation system piping, other than that integrally included in the manufacture of the pool, shall be subject to an induced static hydraulic pressure test (sealed system) at 25 pounds per square inch (psi) (1.8 kg per cm²) for 24 hours. The test shall be performed before the deck is poured, and the pressure shall be maintained throughout construction.

Section 11.1, Entrapment avoidance: This section was revised to change the reference section from Appendix G, Entrapment avoidance to ANSI/APSP/ICC-7 as follows:

11.1 Entrapment avoidance. The ~~outlet(s) including covers, submerged suction piping and fittings and hardware shall be designed in accordance with the manufacturer's specifications to provide protection from body and hair entrapment. (See appendix G, Entrapment avoidance.)~~ comply with the latest published edition of ANSI/APSP/ICC-7.

Section 11.2, Testing and certification: This section was revised to change the reference from ASME/ANSI A112.19.8M to ANSI/APSP/ICC-7.

11.2 Testing and certification. All suction outlet(s) (other than skimmers) ~~that measure less than 12 inches x 12 inches (144 sq. in.) (30.5 cm x 30.5 cm = 930 cm²)~~ shall be provided with covers that have been tested by ~~a nationally recognized testing laboratory and comply with the most recent edition of ASME/ANSI A112.19.8M Suction fittings for swimming pools, wading pools, spas, hot tubs, and whirlpool bathtub appliances~~ an ILAC (International Laboratory Accreditation Cooperation) as required by the latest published edition of ANSI/APSP-16.

Section 11.3, Outlets per pump: Revised to reference standard ANSI/APSP/ICC-7 as follows:

11.3 Outlets per pump. ~~If a single or multiple pump suction system is located below the waterline and any one of the suction outlets becomes blocked, the flow through the remaining suction outlet shall be designed to accommodate 100% of the circulation turnover rate. If located at the waterline, a single suction outlet (such as a skimmer, overflow grate, infinity wall, etc.) shall be permitted provided it is vented to the atmosphere.~~ Outlets per pump shall be in accordance with the latest published edition of ANSI/APSP/ICC-7.

Section 11.4, Water velocity: This section was revised to change the referenced standard from ASME/ANSI A112.19.8M to ANSI/APSP-16 as follows:

11.4 Water velocity. ~~There is no water velocity limitation through suction most covers/grates shall be permitted to exceed 1.5 ft/s (0.46 m/sec) if the grate(s) comply with the most recent edition of ASME/ANSI A112.19.8M in the published edition of ANSI/APSP-16 (see Appendix B). For field fabricated outlet/s: Site-specific, unblockable suction outlet fitting assemblies are defined by ANSI/APSP-16 as being intended as, but not limited to, a single suction outlet. They are limited to 1.5 ft per second (0.46 m/s) of flow velocity through the open area of the cover/grate, unless rated for a lower flow rate by the Registered Design Professional.~~



Section 11.8, Grates: The requirements for grates were revised to require pool closure if any of the 5 entrapment hazards exist as follows:

11.8 Grates. To avoid serious injury or death, close the pool or spa to bathers ~~shall not be operated~~ if any outlet cover/grate is missing, broken, or inoperative. secured in such a way that it is removable without the use of tools, unless removal still provides the equivalent means of protection There is no backup for a missing or damaged outlet cover/grates for all five (5) entrapment hazards (see Appendix H):

- hair entrapment
- limb entrapment
- body entrapment
- mechanical entrapment
- evisceration

Section 11.9, Types of systems: Revised to change the reference standard from ASME/ANSI A112.19.8M to ANSI/APSP/ICC 7 as follows:

11.9 Types of systems. *If a suction outlet system, such as a filtration system booster system, automatic cleaning system, solar system, etc., has a single suction outlet, or multiple suction outlets that are capable of being isolated by valves, each suction outlet shall protect against bather entrapment* ~~by any of the following:~~ in accordance with the latest published edition of ANSI/APSP/ICC-7.

- ~~–an anti-entrapment cover that complies with the most recent edition of ASME/ANSI A112.19.8M.~~
- ~~–a 12 inch x 12 inch (30.5 cm x 30.5 cm) grate or larger, which allows a maximum flow rate not to exceed 1.5 feet per second (fps) (46 cm per second); or~~
- ~~–alternate designs or means that produce equivalent protection.~~

~~NOTE—See Guidelines for Addressing Entrapment Hazards with Pools and Spas, U.S. Consumer Product Safety~~

~~Commission, Publication# 363-009801, (301) 504-0400 or www.cpsc.gov/cpscpub/pubs/363.pdf~~

Section 11.10, Accessibility: Added requirement for installation of vacuum cleaner fittings in accordance with ANSI/APSP/ICC-7 as follows:

11.10 Accessibility. ~~Where~~ When provided, ~~the~~ vacuum cleaner fitting(s) shall be located in an accessible position(s) at least 6 inches (152 mm) and no greater than 18 inches (457 mm) below the ~~minimum operating~~ water level or as an attachment to the skimmer(s). They shall be installed in accordance with the latest published edition of ANSI/APSP/ICC-7.

Section 11.11, Entrapment avoidance for wading pools: Entrapment avoidance was added in Section 6.9 and this section was removed as follows:

~~11.11 Entrapment avoidance for wading pools. If a wading pool has a suction outlet system below the water line, a minimum of two hydraulically balanced suction outlet(s) (suction fittings) with anti-entrapment covers per swimming pool suction line, shall be provided. Wading pool outlet covers measuring less than 12 inches x 12 inches or less than 144 square inches (30.5 cm x 30.5 cm = 930 cm²) shall be the anti-entrapment type and shall comply with the most recent edition of ASME/ANSI A112.19.8M, or 11.1 through 11.10 shall apply.~~



Section 12, Surface skimming systems: The following sections were revised to change reference standard from ASME/ANSI A112.19.8M to ANSI/APSP-16:

12.2 *Skimming devices shall be designed and installed so as not to constitute a hazard to the user. When equalizer lines are used, they shall have an anti-entrapment cover/grate or other entrapment protection in accordance with the ~~most recent edition of ASME/ANSI A112.19.8M~~ latest published edition of ANSI/APSP-16. Skimmer covers located on a walking surface shall be securely seated, slip resistant, of sufficient strength to withstand normal deck use, and not constitute a tripping hazard.*

12.3.3 *When an equalizer line is used, the opening at the pool wall shall be ~~covered with a fitting to prevent hair entrapment in accordance with the most recent edition of ANSI/ASME A112.19.8M~~ protected with a suction outlet cover/grate in accordance with the latest published edition of ANSI/APSP-16.*

Section 13, Electrical and illumination requirements: Revised the lighting requirements of indoor and outdoor pools as follows:

13.2 *Lighting. During periods of operation sufficient illumination shall be provided to allow visibility of all portions of the pools, including the bottom suction outlets. Illumination shall be provided by natural and/or artificial means or both.*

13.2.1 When a pool is open during periods of low natural illumination, artificial lighting shall be provided.

13.2.1.1 Overhead or underwater lighting shall be provided to illuminate the pool and adjacent deck areas. Such lighting shall be listed, labeled and installed in accordance with the NEC.

~~13.2.1~~ 13.2.1.2 For outdoor pools, the combination of overhead lighting shall provide a minimum of three-foot (91 cm) not less than 3 foot-candles (32.3 lux) of illumination at the pool water surface and the adjacent deck area. For indoor pools, the combination of overhead and underwater lighting shall provide not less than of 10 ft-candles (107.64 lux) at the pool water surface.

13.2.2 Underwater lighting shall provide a minimum of 8 foot-candles (fc) (86.11 lux) per sq ft of pool water surface area.

Alternate: Incandescent underwater lighting shall provide a minimum of 1/2 watt per sq ft (5.4 watts per m²) of pool water surface.

13.3 Emergency illumination. Public pools and pool areas that operate during periods of low illumination shall be provided with sufficient emergency lighting to permit evacuation of the pool and securing of the area in the event of power failure. The emergency lighting luminance shall be not less than 1 foot-candle (10.764 lux) at the water surface and the walking surface of the deck.

Section 15.1, Water quality: Clarified that all make-up water shall be from a potable water source as follows:

15.1 *Water quality. ~~15.1.1 Make water. The water supply serving the pool, which may come from a variety of sources, shall meet the requirements of article 1 and article 17. For additional information, All fill and~~ makeup water to maintain the pool water level and water used as a vehicle for sanitizers or other pool chemicals, for pump priming, or for other such additions to the pool, shall be from a potable water source. (See ~~appendix-A~~ Section 17 before the pool is used.)*



Section 16, Waste water disposal: Changed the requirement for treatment of salvaged backwash water as follows:

16.1 Backwash water or pool draining water. Backwash water or pool draining water shall be discharged ~~to the sanitary or storm sewer, or into an approved disposal system on the premise, or by other means approved by the state or local authority~~ in accordance with federal, state and local regulations and may include the sanitary or storm sewer, an approved disposal system on the premises, or other means. No direct connections shall be made between the end of the backwash line and the disposal system. An appropriate air-gap shall be provided.

16.2 Water salvage. Filter backwash water may be returned to the pool if the backwash water has been ~~filtered to remove particles and treated to eliminate coliform bacteria and waterborne pathogens, provided this procedure has been~~ treated to meet potable water quality standards approved by the federal, state or local authority.

Section 17, Sanitizing equipment, chemical feeders, and chemical operational parameter: Revised and updated the requirements for sanitizing equipment, chemical feeders and chemical operational parameters as follows:

17.4.1 ~~Where the addition of chemicals required to maintain pH value and the sanitizer residual of the pool water is controlled by automatic sensing devices and the pH value and the sanitizer residual are automatically determined and displayed or continuously recorded, the operator shall at least once every day determine, by means of manual test methods, the pH value and the free available and the total chlorine residuals or bromine residual to ensure that the automatic sensing devices continue to maintain proper control of the pH value and the sanitizer residual. The results of the manual testing and automatic sensing devices shall be recorded.~~ The performance of automatic sensing devices shall be verified and documented on a daily basis using manual testing techniques.

17.5.1 ~~All swimming pools when in use shall be continuously treated with a sanitizer to ensure that one of the following shall be met:~~

- ~~–there is a residual of free chlorine maintained ideally between 2 ppm (2 mg/kg) and 4 ppm (4 mg/kg), but shall not be less than 1 ppm (1 mg/kg) nor more than 10 ppm (10 mg/kg) and combined chlorine level, as measured by the difference between total chlorine and free chlorine, shall not exceed 0.2 and is preferably 0; or~~
- ~~–there is a residual of total bromine in all parts maintained preferably between 4 ppm (4 mg/kg) and 6 ppm (6 mg/kg), but not less than 2 ppm (2 mg/kg), or more than 10 ppm (10 mg/kg).~~

A residual of an EPA-registered sanitizer shall be present at all times and in all areas of the pool. One of the following EPA-registered sanitizer systems shall be used:

- Chlorine
- Bromine
- Polyhexamethylene biguanide (PHMB)
- Metal-based system.

Not all of these sanitizer systems are approved for all pool uses. Refer to the EPA label, as well as applicable codes and regulations.



17.5.4 Pool water shall be of a clarity ~~shall be maintained such that the deepest part of the pool and/or main drain is clearly~~ to permit an 8 in. (203 mm) diameter black and white Secchi disc or suction outlet (main drain), located on the bottom of the pool at its deepest point, to be visible and sharply defined ~~when viewed from the pool's edge~~ from any point on the deck up to 30 ft (9.14 m) away in a direct line of sight from the disc or suction outlet.