



Designation: F2666 – 16 (Reapproved 2024)

Standard Specification for Aboveground Portable Pools for Residential Use¹

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INTRODUCTION

This specification has been developed to address the risk of drowning and other hazards associated with portable pools. Portable pools—including “self-rising,” “soft-sided self-rising,” “frame pools,” “big blue pools,” “inflatable,” or “inflatable top ring” pools—reemerged in the market in the 1990s. To date, the Consumer Product Safety Commission (CPSC) has reports of nearly 100 portable pool drowning deaths and submersions from 2000 through 2006. Most of these incidents involve children younger than four years of age. In 2005, there were 32 portable pool drowning deaths and 7 additional submersion incidents reported to the Commission. This is nearly triple the number of drowning and submersion incidents the previous year. Further, it is likely that these numbers are undercounts as the CPSC had not previously distinguished among pool types in its database. This specification has been developed by ASTM International in response to this emerging hazard.

1. Scope

1.1 This specification provides safety and performance requirements for portable pools for residential use.

1.2 This specification addresses pool hazards including childhood drowning, sanitation, electrical safety, and entrapment.

1.3 This specification covers both portable pools that are designed to be used with pumps and filters and those not designed to be used with pumps and filters.

1.4 This specification covers all types of portable pools with a water depth of less than 36 in. (91 cm). Aboveground/on ground residential swimming pools with a water depth of 36 in. (91 cm) or greater shall comply with ANSI/APSP-4.

1.5 This specification does not cover public pools, pools used in commercial amusement parks, water fountains, water displays, or fish ponds.

1.6 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the*

responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

F963 Consumer Safety Specification for Toy Safety

F1346 Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs

2.2 ANSI Standards:³

ASME/ANSI A112.19.8 Suction Fittings for Use in Swimming Pools, Wading Pools, Spas and Hot Tubs

ANSI Z535.4 American National Standard for Product Safety Signs and Labels

ANSI/APSP-4 American National Standard for Aboveground/On-Ground Residential Swimming Pools

¹ This specification is under the jurisdiction of ASTM Committee **F15** on Consumer Products and is the direct responsibility of Subcommittee **F15.60** on Portable Pools.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

ANSI/APSP-7 American National Standard for Suction Entrapment Avoidance in Swimming Pools, Spas, Hot Tubs and Catch Basins

ANSI/APSP-16 American National Standard for Standard Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs

ANSI/IAF-8 Model Barrier Code for Residential Swimming Pools, Spas, and Hot Tubs

ANSI Z535.6 Product Safety Information in Product Manuals, Instructions, and Other Collateral Materials

2.3 *Underwriters Laboratories Standards*:⁴

UL 943 Ground Fault Circuit Interrupters

UL 1081 Standard for Swimming Pool Pumps, Filters, and Chlorinators

2.4 *CPSC Documents*:⁵

CPSC Pub. No. 362 Safety Barrier Guidelines for Home Pools

2.5 *Other Standards*:

16 CFR 1501 Method for Identifying Toys and Other Articles Intended for Use by Children Under 3 Years of Age Which Present Choking, Aspiration, or Ingestion Hazards Because of Small Parts⁶

2.6 *ISO/IEC Standard*:⁷

ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories

3. Terminology

3.1 *Definitions of Terms Specific to This Standard*:

3.1.1 *compliant*, *adj*—obeying, produced in accordance with specific rules.

3.1.2 *consistent*, *adj*—harmonious with or compatible.

3.1.3 *fill line*, *n*—visible mark on the interior of the pool or as designated by the manufacturer to indicate the recommended maximum water depth.

3.1.4 *nationally recognized testing laboratory*, *n*—a lab that conducts all testing or certification of products, or both, and is accredited to ISO/IEC 17025 by a member of ILAC (International Laboratory Accreditation Council).

3.1.5 *permanent*, *adj*—durable to the degree of maintaining safe viewing distance (see **8.3.2**), clarity, legibility, and color stability for the reasonably expected life of the product.

3.1.6 *portable pool*, *n*—any movable structure with the intended purpose of being used for swimming or other water recreation by consumers, and having a water depth (at the fill line) less than 36 in. (91 cm).

3.1.7 *suction outlet*, *n*—a fitting, fitting assembly, cover/grate and related components that provide a localized low

pressure area for the transfer of water from a swimming pool, wading pool, spa, or hot tub.

3.1.8 *water watcher tag*, *n*—tag worn by the designated adult responsible for watching children in or near the pool.

4. Classification

4.1 *Types*:

4.1.1 *Type A—Portable Pools without a Pump and Filter*—Pools with no means of water circulation or water treatment during or after use. Such pools include but are not limited to wading pools, splash pools, and kiddy pools.

4.1.2 *Type B—Portable Pools with Pumps and Filters*—Pools that are provided with a means or connection provisions to add equipment for circulation and filtration of water.

5. Performance Requirements

5.1 *Ladders*—Any ladders sold with or for use with Type A or Type B pools shall meet all the applicable requirements found in ANSI/APSP-4 and be child resistant to the degree of preventing unauthorized access for children under the age of five years. Verification can be satisfied by document review.

5.2 *Structural Integrity*:

5.2.1 *Resistance to Horizontal Force*—To prevent injuries associated with sudden release of water, pools with a fill line at 18 in. (46 cm) or greater shall not break or collapse such that the pool loses its structural integrity or functionality when tested in accordance with **6.1.1**. For pools with flexible side walls shaped by the water content, this testing may result in temporary lowering of the pool sides as a result of water loss through spillage. This is considered a failure if the overall structural integrity and functionality are not maintained and water continues to flow after the test.

5.2.2 *Resistance to Vertical Force*—To prevent injuries associated with sudden release of water, pools with a fill line at 18 in. (46 cm) or greater shall not break or collapse such that the pool loses its structural integrity or functionality when tested in accordance with **6.1.2**. For pools with flexible side walls shaped by the water content, this testing may result in temporary lowering of the pool sides as a result of water loss through spillage. This is considered a failure if the overall structural integrity and functionality are not maintained and water continues to flow after the test.

5.3 *Air Valves for Inflatable Pool Sections*:

5.3.1 All air valves shall be accessible for each inflatable section. Once a section of the pool is inflated, the air valve shall be capable of being inserted inside the inflated section without extending beyond the surface more than 0.2 in. (5 mm).

5.4 *Small Parts, Sharp Edges*—No small parts, as defined by 16 CFR 1501, shall be readily accessible. There shall be no accessible, potentially hazardous sharp edges or corners, as defined by Consumer Safety Specification **F963**.

5.5 *Pool Covers*—If a pool “safety” cover is included or made available as an optional accessory, the cover shall comply with Performance Specification **F1346**. If the cover is not claimed to be a safety cover, it shall bear a label as indicated in **8.3.6**.

⁴ Available from Underwriters Laboratories (UL), 2600 N.W. Lake Rd., Camas, WA 98607-8542, <http://www.ul.com>.

⁵ Available from U.S. Consumer Product Safety Commission (CPSC), 4330 East West Hwy., Bethesda, MD 20814, <http://www.cpsc.gov>.

⁶ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, <http://www.access.gpo.gov>.

⁷ Available from International Organization for Standardization (ISO), ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland, <http://www.iso.org>.