

ANSI/APSP/ICC-3 2014

# American National Standard for Permanently Installed Residential Spas and Swim Spas



Approved December 20, 2013



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**Standard for  
Permanently Installed Residential Spas  
and Swim Spas**



**SECRETARIAT:**

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Approved December 20, 2013  
American National Standards Institute

## American National Standard

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## Foreword

This Foreword is not part of the American National Standard ANSI/APSP/ICC-3 2014. It is included for information only.

The *ANSI/APSP/ICC-3 2014, Standard for Permanently Installed Residential Spas and Swim Spas* was approved by ANSI on December 20, 2013, as a revision of *ANSI/APSP-3 1999, Standard for Permanently Installed Residential Spas*.

The objective of this voluntary standard is to provide recommended minimum guidelines for the design, equipment, operation, and installation of permanently installed residential spas and swim spas. It also is intended to assist government and other regulatory bodies in the development, promulgation, and enforcement of criteria for permanently installed residential spas and swim spas.

The design requirements and construction practices in this standard are based upon sound engineering principles, research and field experience that, when applied properly, contribute to the delivery and installation of a safe product.

The words “safe” and “safety” are not absolutes. While the goal of this standard is to design and construct a safe, enjoyable product, it is recognized that risk factors cannot, as a practical matter, be reduced to zero in any human activity. This standard does not replace good judgment and personal responsibility. In permitting use of the pool, spa, swim spa or portable spa by others, owners must consider the skill, attitude, training and experience of the expected user.

As with any product, the specific recommendations for installation and use provided by the manufacturer should be carefully observed.

This standard was prepared by the APSP-3 Writing Committee of the Association of Pool and Spa Professionals (APSP) in accordance with American National Standards Institute (ANSI) Essential Requirements: Due process requirements for American National Standards.

Consensus approval was achieved by a ballot of the balanced APSP Standards Consensus Committee and through an ANSI Public Review process. The ANSI Public Review provided an opportunity for additional input from industry, academia, regulatory agencies, safety experts, state code and health officials, and the public at large.

Suggestions for improvement of this standard should be sent to the Association of Pool and Spa Professionals, 2111 Eisenhower Avenue, Alexandria, VA 22314.

This standard is published in partnership with the International Code Council (ICC). ICC develops and publishes the *International Building Code (IBC)* and *International Residential Code (IRC)*, which are adopted as the basis for the building codes used in most states and jurisdictions within the United States. Additionally, APSP and ICC have collaborated to develop the first comprehensive model swimming pool and spa code, known as the *International Swimming Pool and Spa Code*. This landmark document incorporates and references material from ANSI/APSP standards and ICC's model codes, to create a stand-alone code that is consistent with codes and standards from both organizations.

These codes and standards are the result of a joint effort between ICC and APSP as a service to both the swimming pool and spa community, and building code professionals. It is the hope of both organizations that they will lead to enhanced safety for pool and spa users around the world.

## Organizations Represented

Consensus approval in accordance with ANSI procedures was achieved by ballot of the following APSP Standards Consensus Committee. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

### Producers

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 Custom Pools, Inc . . . . . Scott Heusser  
 Gary Pools, Inc . . . . . Leif Zars  
 Hayward Industries . . . . . John O'Hare  
 HornerXpress South Florida . . . . . Bill Kent  
 Master Spas Inc . . . . . Nathan Coelho  
 Rosebrook Carefree Pools, Inc . . . . . John Bently  
 Trilogy Pools Div. of Viking Pools LCC . . . . Ted Baudendistel  
 S.R. Smith, LLC . . . . . Bill Svendsen  
 Van Kirk & Sons, Inc . . . . . Don Cesarone

### General Interest

American Hotel & Lodging Association . . . Tony Mendez  
 American Red Cross . . . . . Connie Harvey  
 Chesapeake Aquatic Consultants, LLC . . . Frank Goldstein  
 Con-Serv Associates Inc. . . . . Wally James  
 Conroe Independent School District, TX . . . Louis Sam Fruia  
 Don Witte, Consultant . . . . . Don Witte  
 National Environmental Health Association  
 (NEHA) . . . . . Florence Higgins  
 Walt Disney Parks and Resorts . . . . . Michael Beatty  
 World Waterpark Association . . . . . Rick Root  
 YMCA of the USA . . . . . Albert Tursi

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 City of Martinsville, VA . . . . . Kris Bridges  
 City of Mount Dora, FL . . . . . Tom Allen  
 City of Plaud, TX . . . . . Thomas Vyles  
 County of Sacramento, CA . . . . . Colleen Maitoza  
 Illinois Department of Public Health . . . . Justin DeWitt  
 International Code Council . . . . . Lee Clifton  
 New Jersey Dept. of Community Affairs  
 Division of Codes and Standards . . . . . Thomas Pitcherello  
 Oregon Public Health Division . . . . . Stephen Keifer  
 Washington State Dept. of Health . . . . . Paul Reeves

In accordance with American National Standards Institute (ANSI) procedures, this document will be reviewed periodically. The Association of Pool & Spa Professionals welcomes your comments and suggestions, and continues to review all APSP standards, which include:

- ANSI/APSP/ICC-1 2014 Standard for Public Swimming Pools
- ANSI/APSP-2 1999 Standard for Public Spas
- ANSI/APSP/ICC-3 2014 Standard for Permanently Installed Residential Spas and Swim Spas
- ANSI/APSP/ICC-4 a 2013 Standard for Aboveground/Onground Residential Swimming Pools
- ANSI/APSP/ICC-5 2011 Standard for Residential Inground Swimming Pools
- ANSI/APSP/ICC-6 2013 Standard for Residential Portable Spas and Swim Spas
- ANSI/APSP/ICC-7 2013 Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins
- ANSI/APSP/ICC-8 2005 (R2013) Model Barrier Code for Residential Swimming Pools, Spas and Hot Tubs
- ANSI/APSP-9 Standard for Aquatic Recreation Facilities (in progress)
- ANSI/APSP-11 2009 Standard for Water Quality in Public Pools and Spas
- ANSI/APSP/ICC-14 2011 Standard for Portable Electric Spa Energy Efficiency
- ANSI/APSP/ICC-15-a 2013 Standard for Residential Pool and Spa Energy Efficiency
- ANSI/APSP-16 2011 Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs
- APSP 2013 Workmanship Standards for Swimming Pools and Spas

### APSP-3 Writing Committee

- Swim, Inc. . . . . Dan Johnson, Chair
- Bradford Products . . . . . Rick Merrifield
- CMP . . . . . Angelo Pugliese
- Horner Products . . . . . Richard Mosely
- International Code Council . . . . . Lee Clifton
- JMK Plastering . . . . . Jeff McGalliard
- Latham International . . . . . Mike Tinkler
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- Newport Controls . . . . . Lee West
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- Tropical Pools . . . . . Adam Alstott
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## Standard for Permanently Installed Residential Spas and Swim Spas

### 1 Scope and definitions

**1.1** This standard is intended to cover permanently installed residential spas and swim spas and not public spas, swim spas or factory built residential portable spas, swim spas that are used for bathing and are operated by an owner. In this type of spa the heater and water circulating equipment are not an integral part of the product. The spa is intended as a permanent fixture, and is not intended to be moved.

**NOTE:** For the purpose of this standard, the use of the term spa refers to a “permanently installed residential spa or swim spa.”

**1.2** A permanently installed residential swim spa, also known as an exercise spa, is any swim spa other than a factory built residential portable spa or public spa consisting of a large unobstructed volume of water that allows the 99th percentile man to swim (see Section 5.1.4). The design and construction of a permanently installed residential swim spa includes specific features and equipment to produce a water flow intended to allow recreational physical activity including, but not limited to, swimming in place. Permanently installed residential swim spas may include peripheral jetted seats intended for water therapy, heater, circulation and filtration system, or may be a separate distinct portion of a combination spa/swim spa and may have separate controls.

**1.3** This standard is not meant to cover public spas or public swim spas, factory built residential portable spas or swim spas or other spas, such as those operated for medical treatment, physical therapy or other purposes.

**1.4** This standard is meant to cover certain aspects of the design, equipment, operation, installation, new construction, remodeling and renovation of spas and swim spas. This standard shall be met notwithstanding certain variations in equipment, materials, and design.

**1.5 Normative references.** The following standards contain provisions that, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the latest published editions of the standards indicated in Section 2.1.

The materials of manufacture shall be capable of fulfilling the design, installation, and intended use guidelines in this standard. If the materials of manufacture, components and accessories used in permanently installed residential spas or swim spas consist of the following, these standards shall be applicable.

**Concrete Slab:** ACI 302.1R-04, Guide for Concrete Floor and Slab Construction<sup>1</sup>

**Plastic Spa Shells:** ANSI Z124.7-97, Pre-fabricated Plastic Spa Shells<sup>2</sup>

**Tile:** IAPMO IS-2-2003, Tile Lined Roman Bathtubs<sup>3</sup>

**Stainless Steel:** ASTM-A240, Type 316 Stainless Steel<sup>4</sup>

**Pipe Copper Tubing:**

ASTM B 88-2003: Standard Specification for Seamless Copper Water Tube<sup>5</sup>

ASTM B 88 447-07: Standard Specification for Welded Copper Tube<sup>6</sup>

**Plastic Piping and Tubing:**

**ABS:** ASTM D 1527-99 (2005) Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe, Schedules 40 and 80<sup>7</sup>

**PVC:** ASTM D1785-06 Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120<sup>8</sup>

**PVC Hose:** IAPMO PS-33-09, Standard Specification for Flexible Hose for Pools, Hot Tubs, Spas and Jetted Bathtubs<sup>9</sup>

**CPVC:** ASTM D2846 / D2846M-09 Standard Specification for Chlorinated Poly (Vinyl Chloride) (CPVC) Plastic Hot- and Cold-Water Distribution Systems<sup>10</sup>

**PB:** ASTM D3309-96a (R2002) Standard Specification for Polybutylene (PB) Plastic Hot- and Cold-Water Distribution Systems<sup>11</sup>

**Steel Pipe, Galvanized:** ASTM A53m-07, Standard Specification for Pipe, Steel Black and Hot-Dipped, Zinc-Coated, Welded and Seamless<sup>12</sup>

**Plastic Fittings:**

**ABS:** ASTM D2235-04, Specification for Solvent Cements for Acrylonitrile Butadiene Styrene (ABS) Plastic Pipe and Fittings<sup>13</sup>

**PVC:** ASTM D 2564 2004 Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems<sup>14</sup>

**CPVC:** ASTM F493-04, Specification for Solvent Cements for Chlorinated Polyvinyl Chloride (CPVC) Plastic Pipe and Fittings<sup>15</sup>

**Soldered Joints:**

IAPMO IS 3-2006 Installation Standard for Copper Plumbing Tube, Pipe, and Fittings<sup>16</sup>

IAPMO IS 21-2006 Installation Standard for Welded Copper and Copper Alloy Water Tube<sup>17</sup>

(continued)

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2. American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036, (212) 642-4900, www.ansi.org

3, 9, 16, 17. International Association of Plumbing & Mechanical Officials, 4755 East Philadelphia Street, Ontario, California 91761, 909-472-4100, iapmo.org

4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15. ASTM International, 100 Barr Harbor Dr, West Conshohocken, PA 19428, (610) 832-9585, www.astm.org