

ANSI/APSP/ICC-13 2017



# **American National Standard for Water Conservation Efficiency in Residential and Public Pools, Spas, Portable Spas and Swim Spas**

Approved January 6, 2017





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**American National Standard for Water Conservation  
Efficiency in Residential and Public Pools, Spas,  
Portable Spas and Swim Spas**

**SECRETARIAT:**

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This standard is published in partnership with the International Code Council (ICC). The 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 the ICC have collaborated to develop the first comprehensive model swimming pool and spa code, known as the **International Swimming Pool and Spa Code (ISPSC)**. 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.



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## Foreword

This Foreword is not part of the American National Standard ANSI/APSP/ICC-13 2017. It is included for information only.

The ANSI/APSP/ICC-13 2017, *Standard for Water Conservation Efficiency in Residential and Public Pools, Spas, Portable Spas and Swim Spas*, was approved by ANSI as a new standard on January 6, 2017.

The objective of this standard is to provide recommended minimum guidelines to increase the efficient use and conservation of water for residential and public pools, spas, portable spas, and swim spas. It is also intended to assist local jurisdictions and other regulatory bodies, where necessary, in their water conservation efforts during drought and impending drought conditions.

The methods and technology recommendations in this standard are based upon sound engineering principles, research and field experience which, when applied properly, contribute to the efficient use and maintenance of pool and spa water.

The goal of this standard is to provide the builder installer with water conservation best practices and water saving measures in Appendices A – D to pass along to the pool and spa owner, local water boards and local government officials addressing drought concerns.

With the world placing increasing demands on finite water resources, the responsible use of water is an increasingly urgent concern for governments, non-governmental organizations, industrial and corporate users, and private individuals. Major corporations that make significant use of large quantities of water, such as hotel chains, are incorporating water usage and energy efficiency into their corporate social responsibility reporting metrics. The United Nations, Environmental Protection Agency (EPA), and others also are dedicating resources to water quality and sustainability concerns.

Water-related organizations across the world are involved in the integration of research into social, environmental, and economic outcomes related to water usage, but none represent recreational water interests. To address this issue, The Association of Pool & Spa Professionals created the World of Recreational Water (WRW) Foundation in 2012. This 501(c)(3) foundation advocates for the responsible use of scarce water resources and represents, defends, and promotes the sustainable use of recreational water worldwide. Its guiding vision is that present and future generations will be able to fully enjoy and experience the powerful health benefits of recreational water because of smart and responsible actions we take today to conserve and protect water. The WRW provided the initiative and funding for the creation of this standard.

Concurrently, the EPA is seeking lasting sustainable solutions and 21st century water resource constraints through the Safe & Sustainable Water Research Program. And consumers are joining these efforts because increasingly they are demanding higher levels of energy efficiency and water conservation from the pools, spas and hot tubs they purchase and enjoy.

The ANSI/APSP/ICC-13 *Standard for Water Conservation Efficiency in Residential and Public Pools, Spas, Portable Spas and Swim Spas* demonstrates the pool and hot tub industry's commitment to water conservation and the sustainability of its lifeblood: water.

This standard was prepared by the APSP-13 Water Conservation Efficiency in Residential and Public Pools, Spas, Portable Spas and Swim Spas Standard Writing Committee (SWC) of the Association of Pool & Spa Professionals (APSP) in accordance with American National Standards Institute (ANSI) Procedures for the Development and Coordination of American National Standards utilizing consensus approval achieved by ballot of the ANSI Standards Consensus Committee (SCC).

The SCC that approved this standard was balanced to ensure that individuals from competent and concerned interests have had an opportunity to participate. The proposed standard was made available for public review and comment, which provides an opportunity for additional input from industry, academia, regulatory agencies, and the public at large.

Consensus approval was achieved by a ballot of the American National Standards Institute (ANSI) Consensus Voting Body, the APSP Standards Consensus Committee (SCC), 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.



## Organizations Represented

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

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\*non-voting



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/NSPI-2 1999** Standard for Public Spas

**ANSI/APSP/ICC-3 2014** Standard for Permanently Installed Residential Spas and Swim Spas

**ANSI/APSP/ICC-4 2012** 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)** Standard Model Barrier Code for Residential Swimming Pools, Spas, and Hot Tubs

**ANSI/IAF-9 2005** Standard for Aquatic Recreation Facilities

**ANSI/APSP-11 2009 (PA)** Standard for Water Quality in Public Pools and Spas

**ANSI/APSP/ICC/NPC-12 2016** Standard for the Plastering of Swimming Pools and Spas

**ANSI/APSP/ICC-14 2014** Standard for Portable Electric Spa Energy Efficiency

**ANSI/APSP/ICC-15 2011** Standard for Residential Swimming Pool and Spa Energy Efficiency

**ANSI/APSP-16 2011** Standard for Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs

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# Standard for Water Conservation Efficiency in Residential and Public Pools, Spas, Portable Spas and Swim Spas

## 1. SCOPE

**1.1** This standard covers methods and technologies to increase the efficient use and conservation of water for residential and public recreational pools, spas, portable spas and swim spas equipped with a filtration circulation system. This standard applies to both new and existing facilities.

## 2. Purpose

**1.1** The purpose of this standard is to address water use by pools, spas, portable spas and swim spas, and provide a means of achieving a higher degree of water use efficiency, including but not limited to: 1) evaporation, 2) filtration, 3) leaks, 4) people use, 5) maintenance, and 6) total dissolved solids control. See Appendices: *A Recommended Water Saving Measures, B Procedure for an Evaporation Bucket Test, C Water Conservation Measures While Renovating a Pool or Inground Spa and D Addressing Drought Concerns with Local Government Officials and Water Boards.*

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## 3. Variations in design

**3.1** This standard permits variations in design and equipment, including special features such as, but not limited to pools and spas with operating water levels at or above deck level; vanishing edge and/or perimeter flow pools and/or spas, gutter pools etc. Such designs shall not be required to comply with certain sections of this standard, since, by virtue of design, they cannot achieve compliance

## 4. New Construction, Equipment and Design:

Exception: Portable Spas and Portable Exercise Spas provided with a vapor-retardant cover

**4.1 Fill water:** Fill water for all newly installed pools and spas shall be metered, monitored or otherwise controlled to prevent over-filling.

**4.1.1** Methods of preventing over filling shall include, but are not limited to: deck mounted float devices

with automatic hose shut-off control or similar devices. Cross-connections shall be prohibited, except where approved backflow prevention assemblies, backflow prevention devices or other means or methods are installed to protect the potable water supply.

**4.2 Splash-out.** Newly installed pools and spas shall be designed, when possible based on materials and manufacturing, to divert splashed water back into the pool or spa to reduce the potential for splash out.

**4.2.1** Coping or cantilevered decking extending over the edge of the pool 1 in. (25.4 mm) or more is permitted to reduce splash out.

**4.2.2** Water level shall be maintained at normal operating level (typically center of skimmer opening) or lower.

**4.3 Evaporation.** Outdoor pools and outdoor permanent spas shall, when required by the authority having jurisdiction, be provided with a vapor-retardant cover or other vapor-retardant means approved by the authority having jurisdiction (AHJ). See *Appendix A*.

**NOTE:** The addition of make-up water, or any chemical to pool water, in most cases results in an increase in Total Dissolved Solids (TDS) over time. Unusually large increases in TDS can occur, especially in desert climates, simply by the addition of make-up water. If chemical vapor retardant products are used, TDS should be monitored monthly.

**4.4 Leaks.** Upon filling new pools and starting the circulation system, water level shall be monitored to verify that there are no leaks. With the pool circulating, water level in the pool/spa shall be marked and/or measured and the level shall be verified in approximately 24 hours. During the level check period, auto-fill devices shall be shut off and auto-overflows shall be plugged. It is recommended that the test not be performed in periods of high or gusting winds to limit evaporative loss.

**4.4.1** If the initial test results are not conclusive, a bucket test shall be performed. See *Appendix B*.

**4.5 Filtration system water efficiency.** When cleaning or backwashing the filter, the manufacturer's instructions shall be followed. Cleaning of filters shall be required upon the following conditions:

**4.5.1 Sand Filters** – When the pressure gauge reading is 8-12 PSI (0.55-0.83 BAR) higher than the starting