

ANSI/APSP/ICC-14 2011

American National Standard for Portable Electric Spa Energy Efficiency

Approved January 4, 2011



ANSI/APSP/ICC-14 2011

**American National Standard for
Portable Hot Tub Energy Efficiency**



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Approved January 4, 2011
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-14 2011. It is included for information only.

The ANSI/APSP/ICC-14 2011, Standard for Portable Spa Energy Efficiency, was approved by ANSI as a new standard on January 4, 2011.

The objective of this voluntary standard is to provide recommended minimum guidelines for testing the energy efficiency of factory-built residential portable electric spas. It also defines an evaluation procedure to qualify a test facility for the sole purpose of testing to the requirements of this standard. This standard is intended to meet the needs for incorporation into national or regional building codes, and also for adoption by federal, state and/or local governments, and/or as a local code or ordinance. It is understood that, for the sake of applicability and enforceability, the style and format of the standard may need adjustment to meet code or ordinance style of the jurisdiction adopting this document.

The APSP does not certify, test or endorse any product.

This standard is based on a collaborative effort dating back to 2005 between the Association of Pool & Spa Professionals, leading portable spa manufacturers, and the California Energy Commission and its contractors Pacific Gas and Electric (PG&E) and Davis Energy Group. The test procedures in this standard are based on that effort and the test method for portable spas described in Section 1604 of Title 20, California Code of Regulations as amended December 3, 2008. To further support the claims in this standard, the portable spa manufacturers, working through the APSP, conducted research and testing of the energy efficiency of portable spas.

The recommendations and testing 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 goals of this standard are 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 the need for good judgment and personal responsibility. In permitting use of the pool or 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-14 Portable Electric Spa Energy Efficiency Standard 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 ANSI 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. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

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.

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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-1 2003** Standard for Public Swimming Pools
- ANSI/APSP-2 1999** Standard for Public Spas
- ANSI/APSP-3 1999** Standard for Permanently Installed Residential Spas
- ANSI/APSP-4 1999** Standard for Aboveground/Onground Residential Swimming Pools
- ANSI/APSP/ICC-5 2011** Standard for Residential Inground Swimming Pools
- ANSI/APSP-6 1999** Standard for Residential Portable Spas
- ANSI/APSP-7 2006** Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins
- ANSI/APSP-8 1996** Model Barrier Code for Residential Swimming Pools, Spas and Hot Tubs
- ANSI/APSP-9 2005** Standard for Aquatic Recreation Facilities
- 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
- APSP-15** Standard for Pool and Spa Energy Efficiency (Draft)
- ANSI/APSP -16 2011** Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs
- APSP-17** Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems (Draft)
- APSP 2005** Workmanship Standards for Swimming Pools and Spas

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This is a preview of "ANSI/APSP/ICC 14-201...". [Click here to purchase the full version from the ANSI store.](#)

Portable Electric Spa Energy Efficiency Standard

1 Scope

1.1 These requirements apply to factory-built residential portable electric spas that are used for bathing and are operated by a private owner. Residential exercise spas (also known as swim spas) and portions of combination spas/swim spas are included in this standard.

1.2 This standard is meant to establish minimum energy efficiency requirements for portable electric spas. This standard shall be met notwithstanding certain variations in equipment, materials, and design (refer to ANSI/APSP-6).

1.3 These requirements do not apply to public spas (ANSI/APSP-2), permanently installed spas (ANSI/APSP-3), or other spas, such as those operated for medical treatment, physical therapy or other purposes.

1.4 This standard also defines an evaluation procedure to qualify a test facility for the sole purpose of testing to the requirements of this standard.

1.5 Other standards are referenced in this standard for items not covered.

2 Normative References

ANSI/APSP-2 *Standard for Public Spas*

ANSI/APSP-3 *Standard for Permanently Installed Residential Spas*

ANSI/APSP-6 *Standard for Portable Spas*

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

ISO/IEC Guide 65 *General Requirements for Bodies Operating Product Certification Systems*

3 Definitions

ambient temperature: Air temperature inside testing chamber

ancillary equipment: Additional components used in the construction of the spa beyond pumps, heaters and control systems

certification body (CB): An independent third party that operates a product, process or service certification system

chamber: A controlled environment suitable for conducting energy efficiency testing

cover, specified: The cover that is provided or specified by the spa manufacturer

energy efficiency standard: A performance standard expressed in numerical form, such as energy factor, EER, or thermal efficiency

exercise spa (Also known as a swim spa): Variant of a spa in which the design and construction includes specific features and equipment to produce a water flow intended to allow recreational physical activity including, but not limited to, swimming in place. Exercise 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/exercise spa and may have separate controls. These aquatic vessels are of a design and size such that it has an unobstructed volume of water large enough to allow the 99th Percentile Man as specified in ASME A112.19.8-2007 to swim or exercise in place

fill volume: The halfway point between the bottom of the skimmer opening and the overflow level of the spa. In the absence of a wall skimmer, the fill volume is 6 inches (152 mm) below the overflow level of the spa

filter cycle: The period when the control system activates a pump intended to move water through a filter media

gallon: One U.S. liquid gallon

heating cycle: The period when the temperature regulating system activates the heating component for the purpose of increasing the water temperature

hot tub: See spa

inground spa: Non-portable, non-self-contained spa (Refer to ANSI/APSP-3 Permanent Inground Spas)

NIST: National Institute of Standards and Technology

normalize: Calculation of power consumption to eliminate temperature bias

power factor: The ratio of watts to volt-amperes of an AC circuit

purge cycle: The period when the control system activates a pump intended to rapidly move water throughout the spa

skimmer, vented: A suction opening intended to remove floating debris from the water surface. Installed where part of the water intake opening is open to atmospheric pressure