

ANSI/APSP/ICC-4 2012

American National Standard for Aboveground/Onground Residential Swimming Pools



Includes Addenda A
Approved April 4, 2013



This is a preview of "ANSI/APSP/ICC 4a-201...". [Click here to purchase the full version from the ANSI store.](#)

ANSI/APSP/ICC-4 2012

**American National Standard for
Aboveground/Onground
Residential Pools**

SECRETARIAT:

Association of Pool & Spa Professionals
2111 Eisenhower Avenue
Alexandria, VA 22314
703 838-0083
APSP.org

Includes Addenda A
Approved April 4, 2013
American National Standards Institute

Addenda A to:

American National Standard for Aboveground/Onground Residential Pools

Following approval by the APSP-4 Committee and the ANSI Standards Consensus Committee, and after public review, Addenda A was approved by the American National Standards Institute on April 4, 2013. The original edition of this standard was approved by the American National Standards Institute on July 16, 2012.

Each change given below is identified in the standard, by a bar in the margin with the letter (a) next to it.

(a)

Summary of Changes

| Page | Section | Change |
|-------------|--------------------|---------------------------|
| 4 | Section 7.2 | Add Section 7.2.16 |
| 4 | Section 7.3 | Add Section 7.3.9 |
| 15 | Section 15 | Add Section 15.4 |

American National Standard

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standard developer. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity.

Consensus requires that all views and objections be considered and that a concerted effort be made toward their resolution. The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved this standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard.

Important Notice about this Document

This voluntary standard has been developed under the published procedures of the American National Standards Institute (ANSI). The ANSI process brings together volunteers representing varied viewpoints and interests to achieve consensus.

APSP does not write the standards. Rather, APSP facilitates a forum for its members, and others interested in pool and spa design and safety, to develop standards through the consensus procedures of the American National Standards Institute (ANSI). While the APSP administers the process and establishes rules to promote fairness in the development of consensus, it does not independently test, evaluate, or verify the accuracy of any information or the soundness of any judgments contained in its codes and standards.

In issuing and making this document available, the APSP is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the APSP undertaking to perform any duty owed by any person or entity to someone else. The APSP disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication of, use of, or reliance on this document.

The APSP has no power, nor does it undertake, to police or enforce compliance with the contents of this document. The APSP does not list, certify, test, or inspect products, designs, or installations for compliance with this document. Any certification or other statement of compliance with the requirements of this document shall not be attributable to the APSP. Any certification of products stating compliance with requirements of this document is the sole responsibility of the certifier or maker of the statement. The APSP, its members, and those participating in its activities do not accept any liability resulting from compliance or noncompliance with the provisions given herein, for any restrictions imposed on materials, or for the accuracy and completeness of the text.

Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstance. It is assumed and intended that pool users will exercise appropriate personal judgment and responsibility and that public pool owners and operators will create and enforce rules of behavior and warnings appropriate for their facility.

Copyright Notice

Copyright ©2013 by The Association of Pool & Spa Professionals, 2111 Eisenhower Avenue, Alexandria, VA 22314-4695. Printed in the United States of America. All rights reserved. No part of this book may be reproduced, stored in a retrieval system, transcribed or transmitted, in any form or by any means or method, electronic, mechanical, photocopy, recording, or otherwise, without advance written permission from the publisher: The Association of Pool & Spa Professionals, 2111 Eisenhower Avenue, Alexandria, VA 22314-4695.

"APSP," "The Association of Pool & Spa Professionals," and the APSP logo are trademarks of The Association of Pool & Spa Professionals.

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

All American Custom Pools & Spas, Inc . . . John Romano
 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
 Royal Fiberglass Pools Inc Tony Hebert
 S.R. Smith, LLC Bill Svendsen
 Van Kirk & Sons, Inc Don Cesarone

General Interest

American Red Cross Connie Harvey
 Con-Serv Associates, Inc Wally James
 Conroe Independent School District, TX. Louis Sam Fruia
 Higgins Environmental Solutions
 (National Environmental Health Assoc.) Florence Higgins
 Walt Disney Parks and Resorts Michael Beatty
 Gene Wells Consulting Gene Wells
 Don Witte, Consultant Don Witte
 World Waterpark Association Rick Root
 Wyndham Worldwide Corporation
 (American Hotel & Lodging Association) Tony Mendez
 YMCA of the USA Albert Tursi

Government/User

City of Martinsville, VA Kris Bridges
 City of Mount Dora, FL Tom Allen
 City of Southfield, MI Wayne Jewell
 Fairfax County, VA. Marc Mordue
 Illinois Department of Public Health Justin DeWitt
 International Code Council. Lee Clifton
 North Carolina Dept. of Insurance
 Office of State Fire Marshall. Helen DiPietro
 N.J. Dept. of Community Affairs
 Division of Codes and Standards Thomas Pitcherello
 Oregon Public Health Division Stephen Keifer
 U.S. Consumer Product Safety Commission. Mark Eilbert*
 Washington State Dept. of Health. Gary Fraser

*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-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/ICC-4 2012 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 2005 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
- ANSI/APSP/ICC-15 2011 Standard for Pool and Spa Energy Efficiency
- 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

APSP-4 Writing Committee

Buster Crabbe Swimming Pools Gregory Aymes, Chair
 Confer Plastics Inc. Dennis Lederhouse
 Intex Recreation Corp. Zoran Madzar
 IAPMO R&T Lab. Tony Zhou

Observers

Wil-Bar International Ken Lovas
 Trevi Pools Marilyn Staneff
 Intex Recreation Corp. Matthew Whalen

APSP Staff

Bernice Crenshaw, Director, Technical and Standards
 Carvin DiGiovanni, Senior Director, Technical and Standards

Foreword

This Foreword is not part of the American National Standard ANSI/APSP/ICC-4 2012. It is included for information only.

Following approval by the APSP-4 Committee and the ANSI Standards Consensus Committee, and after public review, Addenda A was approved by the American National Standards Institute on April 4, 2013. The original edition of this standard was approved by the American National Standards Institute on July 16, 2012.

This standard is a revision of *ANSI/APSP-4 2007, American National Standard for aboveground/onground residential swimming pools*.

The objective of this voluntary standard is to provide recommended minimum guidelines for the design, equipment, operation, and installation of aboveground/onground residential swimming pools. It is intended to meet the needs for incorporation into national or regional building codes, and also for adoption by state and/or local municipalities 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 the code or ordinance style of the jurisdiction adopting this document.

The design recommendations 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 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 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-4 Aboveground/Onground Standard Writing Committee of The Association of Pool and Spa Professionals (APSP) in accordance with the American National Standards Institute’s (ANSI) Essential Requirements: Due process requirements for American National Standards.

Consensus approval was achieved by a ballot of the balanced APSP Standards Consensus Committee (members listed on p. iv) 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 the 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.

Contents

| Sections | Page |
|---|-------------|
| American National Standard | iii |
| Foreword | v |
| 1 Scope | 1 |
| 2 Normative References | 1 |
| 3 Codes and Compliance | 1 |
| 4 Materials of Manufacture | 2 |
| 5 Dimensional Design | 2 |
| 6 Pool and Component Design. | 2 |
| 7 Instructions and Responsibilities. | 3 |
| 8 Safety Signs. | 5 |
| 9 Aboveground/onground pool ladders and staircases | 5 |
| 10 Aboveground/onground pool raised decks and fencing | 10 |
| 11 Aboveground/onground swimming pool circulation components and related equipment. | 11 |
| 12 Water supply | 14 |
| 13 Waste water disposal | 14 |
| 14 Sanitizing equipment, oxidation equipment, UV light units, and chemical feeders | 14 |
| 15 Electrical requirements. | 14 |

NOTE: Solid vertical lines within the body of the standard indicate a technical change from the requirements of the 2007 edition. Deletion indicators in the form of an arrow (→) are provided in the margin where an entire section, paragraph, exception, or table has been deleted, or an item in a list of items or a table has been deleted.

| Figures | Page |
|--|-------------|
| 1 Typical A-frame ladder (type A and type B) | 6 |
| 2. Typical staircase ladder (type C) | 6 |
| 3 Typical in-pool ladder (type D) | 6 |
| 4 Typical in-pool staircase ladder (types E and F) | 6 |
| 5 Torso test probe | 6 |
| 6 Head test probe | 6 |
| 7 Dimensions for typical A-frame ladder. | 7 |
| 8 Dimensions for typical staircase ladder | 8 |
| 9 Dimensions for typical in-pool ladder | 8 |
| 10 Dimensions for typical in-pool staircase ladder | 9 |
| 11 Typical cantilever deck support | 10 |
| 12 Typical free-standing deck support | 10 |
| A-1 Sign warning against shallow water diving | A-11 |
| A-2 Examples of other safety signs | A-12 |
| A-3 Examples of other safety signs | A-13 |

Appendices

| | |
|--|------|
| A Chemical Operational Parameters | A-1 |
| B Signage Information | A-10 |
| C Examples of Safety Signs | A-11 |
| D Safety Considerations and Warning Recommendations | A-14 |
| E Metric Conversion Table | A-15 |
| F Safety Brochures and Education Programs | A-16 |
| G Sources of Material | A-17 |

Standard for Aboveground/Onground Residential Swimming Pools

1 Scope

1.1 This standard describes certain criteria for the design, manufacturing, testing, care, and use of aboveground/onground residential (Type-O) non-diving swimming pools and their components.

1.1.1 Aboveground/onground residential (Type-O) non-diving swimming pools are defined as pools with a shallow area water depth of 36 in. (914 mm) minimum at the wall and a water depth of 48 in. maximum (1219 mm) at the wall. This includes portable pools with flexible/non-rigid or rigid side walls which achieve their structural integrity by means of uniform shape, support frame or a combination thereof, and can be disassembled for storage or relocation.

1.2 Aboveground/onground residential swimming pools are for swimming and wading only. No diving boards, slides, or other equipment are to be added to an aboveground/onground pool that in any way indicates that an aboveground/onground pool may be used or intended for diving or sliding purposes.

1.3 This standard does not apply to pools covered by *ANSI/APSP-1 Standard for public swimming pools* or by *ANSI/APSP-5 Standard for residential inground swimming pools* or other pools or spas designed for medical treatment, physical therapy, or other special purposes.

2 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 most recent editions of the standards indicated below.

ANSI Z535 series for safety signs and colors (5 standards) (2011)¹

ANSI Z21.56-2006/CSA 4.7-2006, *Gas fired pool heaters*²

1-3. American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036, (212) 642-4900, www.ansi.org

4-6. The Association of Pool and Spa Professionals, 2111 Eisenhower Avenue, Alexandria, VA 22314, (703) 838-0083, www.APSP.org

7. National Electrical Manufacturers Association (NEMA), 1300 N. 17th Street, Suite 1847, Rosslyn, VA 22209, (703) 841-3200, www.nema.org

8-10. National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269 (617) 770-3000, www.nfpa.org

11. American Society of Heating, Refrigerating and Air Conditioning Engineers, 1791 Tullie Circle NE, Atlanta, GA 30329, (404) 636-8400, www.ashrae.org

12. American Society of Mechanical Engineers (ASME), 3 Park Avenue, 20th Floor, New York, NY 10016, (212) 591-8562, www.asme.org

13-15. ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428, (610) 832-9585, www.astm.org

16-18. Underwriters Laboratories (UL), 333 Pfingsten Road, Northbrook, IL 60062, (847) 272-8800, www.ul.com

19. U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250; toll free (866) 512-1800; order online from <http://bookstore.gpo.gov>

ANSI Z21.56a (2006) - Gas fired pool heaters³

ANSI/APSP-7 (2006), *Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins*⁴

ANSI/APSP-8 (2005), *Model barrier code for residential swimming pools, spas, and hot tubs*⁵

ANSI/APSP-16 (2011), *Suction fittings for use in swimming pools, wading pools, spas, and hot tubs*⁶

ANSI/NEMA MG1-2011, *Motors and generators*⁷

ANSI/NFPA 54 (2012), *National Fuel Gas Code* (same as ANSI Z223.1-2002)⁸

ANSI/NFPA 58 (2011), *Storage and handling of liquefied petroleum gases*⁹

ANSI/NFPA 70 (2011), *National Electrical Code*, Article 680¹⁰

ANSI/ASHRAE 62-2001, *Ventilation for acceptable indoor air quality*¹¹

A112.1.2 (2011), *Air gaps in plumbing systems*¹²

ASTM D1593-2009, *Standard specification for nonrigid vinyl chloride plastic film and sheeting*¹³

ASTM D-1790-2008, *Standard test method for brittleness temperature of plastic sheeting by impact*¹⁴

ASTM F1346-91 (2010), *Standard performance specification for safety covers and labeling requirements for all covers for swimming pools, spas, and hot tubs*¹⁵

UL 1081 (2011), *Standard for swimming pool pumps, filters, and chlorinators*¹⁶

UL 1261 (2010), *Standard for electric water heaters for pools and tubs*¹⁷

UL 1995 (2009), *Standard for heating and cooling equipment*¹⁸

U.S. Code of federal regulations, 16 CFR, Part 1303.1 et seq.¹⁹

3 Codes and Compliance

3.1 The authority having jurisdiction may require obtaining permits for installations (e.g., building, zoning, electrical).

3.2 Any after-market or home-built deck, if construction of such is allowed by the manufacturer, shall comply with the local building code, including load capacity and fencing requirements.