Approved American National Standard

ANSI

ANSI/APSP-11 2009

American National Standard for Water Quality in Public Pools and Spas

Approved June 15, 2009

APSP

The Association of Pool & Spa Professionals®

ANSI
APSP-11 2009

American National Standard

For Water Quality in Public Pools and Spas

Sponsor

The Association of Pool and Spa Professionals

Approved June 15, 2009

American National Standards Institute, Inc.

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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.

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The Association of Pool and Spa Professionals, 2111 Eisenhower Avenue, Alexandria, VA 22314

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Foreword

(This Foreword is not a part of the American National Standard ANSI/APSP-11 2009)

The ANSI/APSP-11 2009, *Standard for water quality in public pools and spas,* was approved by ANSI as a new standard on June 15, 2009.

The objective of this voluntary standard is to provide recommended minimum guidelines for the specifications for water quality parameters. It is intended to meet the need for incorporation into national or regional health 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.

This standard was drafted by the Recreational Water Quality 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 ANSI Consensus Voting Body below 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.

Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

Organization Represented — **Name of Representative**

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

Anne Arundel County, MD, Health Department ..... Lucy Goszkowski
Aquatic Consulting Services ..... Alison Osinski
Aquatic Development Group ..... Jim Dunn
Arch Chemicals Inc. ..... J.P. Brennan
Belleair Pool Supply ..... David Oxley
Busch Entertainment Corp. ..... John Linn
Carson City (NV) Health and Human Services ..... Neil Fox
Champagne Aqua Tech Pools ..... Moseley Richard
Chesapeake Aquatic Consultants, LLC ..... Frank Goldstein
City of Austin (TX) Parks and Recreation Department ..... Farhad Madani
Conroe (TX) Independent School District ..... Sam Fruia
County of Ventura (CA) Environmental Health Division ..... Sean Debley
Cullman County (AL) Health Department ..... Donna Dunn
DRMP, Inc. ..... William Smoot
Edward M. Pribonic, P.E., Inc. ..... Ed Pribonic
Florida Swimming Pool Association ..... Jennifer Hatfield
Gorlin Pools and Spas ..... Steven Gorlin
Halogen Supply Company Inc. ..... Larry Ryczek
Hyland Hills Park and Recreation District (Water World) ..... Rick Fuller

Jeff Ellis & Associates ..... Wayne Crokus
Jefferson County (AL) Health Dept. ..... Albert Hendrix
LBI Pools & Spas ..... Larry Biscornet
Los Angeles County, Environmental Health - Swimming Pool Program ..... Bernard Franklin
National Plasterers Council ..... Mitch Brooks
New Hampshire Dept. of Environmental Services ..... Tim Wilson
New Jersey Department of Health, Public Health Sanitation and Safety Program ..... Loel Muetter
NSF International ..... Richard Martin
Oklahoma City-County Health Department ..... Susan Campbell
Oregon Public Health Division ..... Steve Keifer
Pentair Water Commercial Pool and Spa ..... Tim Ruesch
Plano (TX) Health Department ..... Tom Vyles
Portofino Pools ..... Jack Manilla
Professional Pool Operators of America ..... Kent Williams
Recreation Safety Institute ..... Arthur Mittelstaedt
Santa Barbara Control Systems ..... Pablo Navarro
Texas Dept. of State Health Services ..... Kathleen Moore
Taylor Technologies ..... Wayne Ivusich
Tropical Pools and Spas, Inc ..... Adam Alstott
U.S. Consumer Product Safety Commission (CPSC) ..... Troy Whitfield
USA Swimming ..... Sue Nelson
Van Kirk and Sons, Inc. ..... Donald Cesarone Jr.
Walt Disney World Company ..... Michael Beatty
Washington State Department of Health ..... Gary Fraser
Water Odyssey by Fountain People ..... Stan Caulkins

Recreational Water Quality Committee

Geoffrey Brown, Chair ..... North American Salt Company
Tom Berry ..... Natural Chemistry, Inc.
Robert G. Berube ..... Church and Dwight Co. Inc.
*Suzie Campbell ..... Oklahoma City-County Health Dept.
* Dr. Rick Coffey ..... Zodiac
Sam Fruia ..... Conroe Independent School District
*Keith Harbol ..... Watkins Mfg. Corp.
Ken Jenke ..... Zodiac Pool Systems, Inc.
*Ed Lightcap ..... DuPont Chemical Solutions Enterprise
*Dr. R. Neil Lowry ..... Lowry & Associates
Dr. Ellen Meyer ..... Arch Chemicals
David Oxley ..... Belleair Pool Supply
Al Pastore ..... N. Jonas & Co., Inc.
Dr. Stanley R. Pickens ..... PPG Industries, Inc.
*Ben Rhue ..... Aquatic Quality Assurance (AQA)
Tom Seechuk ..... LaMotte Company
Kim A. Skinner ..... Pool Chlor
*Dr. Roy Vore ..... DuPont Chemical Solutions Enterprise
John Weber ..... Advantis Technologies
*Dr. Lee Wikstrom ..... Wikstrom Water Treatment

* Former member of the Recreational Water Quality (RWQ) Committee

APSP Staff

Jeanette Smith

Introduction

This standard is the first comprehensive, data-driven, and knowledge-based national standard available for pool and spa water quality and chemistry. This standard was developed in response to the need expressed by public health officials for a national standard for water quality in public pools and spas. A 2004 survey of more than 5000 public health officials and sanitarians nationwide provided an overwhelming endorsement for the development of a national water quality standard.

The Recreational Water Quality (RWQ) Committee of The Association of Pool and Spa Professionals (APSP) actively partnered with public health officials during the development of this draft standard by visiting with key sanitarians and asking for feedback on the standard. Public health and code officials also played an important role in the development of consensus necessary for this standard to be published as an American National Standard.

Since APSP has been accredited by the American National Standards Institute (ANSI), its standards are developed according to ANSI's published requirements. Since 1983, APSP has published nine ANSI standards for the pool and spa industry. When this standard is published as an American National Standard, it will enable state and local health and code officials to adopt a uniform, national code governing the maintenance of swimming pools, spas, and other treated recreational water venues.

The ANSI process requires consensus approval through a uniform national public review and balanced-interest voting process. It affords a rigorous third-party process for standards development, providing due process, openness, and consensus agreement among a diversified group of stakeholders. These include public health and code officials, architects, regulatory agencies, academicians, representatives of safety organizations, consultants, subject matter experts, as well as pool and spa professionals. The balance of interests represented by voters is another key component of ANSI's requirements. During the ANSI process all objections are considered with an effort toward resolution. On account of the universal scope and depth of this unique standard, APSP encourages state and local public health and code officials to adopt it into their state laws and local codes.

The standards developed by APSP are the benchmark for the pool and spa industry because they are based on science, verifiable data, and best practices. The ANSI/APSP standards are voluntary minimum standards. Their goal is to provide for all viable technologies. APSP standards promote aquatic safety, provide consistency in design, provide construction and installation requirements for the nation, and provide the basis for adoption into law by state and local jurisdictions. For example, the International Code Council (ICC) in 2008 adopted ANSI/APSP-7 2006 *Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Catch Basins* into the body of the International Building Code (IBC, public pools and spas) and, by reference, into Appendix G of the International Residential Code (IRC, residential pools and spas). The IBC code has been adopted by all 50 states and 46 states have adopted the IRC.

During development of the standard, the RWQ Committee decided that in addition to writing a uniform national consensus standard, it wanted to provide readers with explanatory information about the values for the requirements listed in the body of the standard. In developing the Appendix A material, the committee questioned many standard practices in the industry and sought to provide scientific justification for the values in the body of the standard. The resulting Appendix A took over two years to write.

Many water quality parameters that do not have a direct impact on public health, but that can severely influence the operation of the pool, such as the effect of low calcium levels on corrosion, were included in the standard. The standard is primarily health and safety related and operating within the allowed ranges of all the parameters would be a minimum requirement and may not be sufficient to protect pool surfaces from damage. Further information on the protection of pool surfaces may be found in Appendix A. For purposes of public health, the requirements in the body of the standard generally reference a minimum or a maximum value, or both. It is important to remember that there is a range of values that are acceptable for pool and spa operation. Appendix A should be consulted for recommendations on the ideal ranges of operation in those instances when the body of the standard lists minimums/maximums. In order to distinguish the operational factors from the factors that could represent an immediate danger to public health, the section on pool closure was added. In this special section each of the highlighted factors — clarity, sanitizer level, pH, and temperature — were included because of their direct impact on public health

ANSI/APSP-11 2009 Standard for Water Quality in Public Pools and Spas

1 Scope

1.1 Public swimming pools and spas. This standard covers public swimming pools and spas to be used for bathing and operated by an owner, licensee, or concessionaire, regardless of whether a fee is charged for use.

1.1.1 Public swimming pools covered by this standard. Public swimming pools covered by this standard include Class A pools, Class B pools, Class C pools, Class D pools, Class E pools, and Class F pools. See section 2 for definitions.

1.1.2 Pools designed for interaction with marine life have special requirements and are not covered by this standard.

1.2 Variation in methods. This standard provides specifications for water quality parameters, but does not specify the technologies needed to achieve these values.

2 Definitions

Class A Pool: Class A pools are intended for use for accredited competitive aquatic events such as Federation Internationale de Natation Amateur (FINA), USA Swimming, USA Diving, National Collegiate Athletic Association (NCAA), National Federation of State High School Associations (NFSHSA), etc. The use of the pool is not limited to competitive events.

Class B Pool: Any pool intended for public recreational swimming not otherwise classified.

Class C Pool: Pools operated solely for and in conjunction with lodgings such as hotels and motels and pools intended for use for apartments, condominiums, property owners associations, and multi-family owned pools.

Class D, Other Pool: Any pool operated for medical treatment, therapy, exercise, lap swimming, recreational play, and other special purposes, including, but not limited to, wave or surf action pools, activity pools, splasher pools, kiddie pools, and play areas.

Class D-1, Wave Action Pools: Wave action pools include any pool designed to simulate breaking or cyclic waves for purposes of general play or surfing.

Class D-2, Activity Pools: Activity pools are those pools designed for casual water play ranging from simple splashing activity to the use of attractions placed in the pool for recreation.

Class D-3, Catch Pools: Catch pools are bodies of water located at the termination of a manufactured waterslide attraction provided for the purpose of terminating the slide action and providing a means for exit to a deck or walkway area.

Class D-4, Leisure Rivers: Manufactured streams of near-constant depth in which the water is moved by pumps or other means of propulsion to provide a river-like flow that transports bathers over a defined path that may include water features and play devices.

Class D-5, Vortex Pools: Circular pools equipped with a method of transporting water in the pool for the purpose of propelling riders at speeds dictated by the velocity of the moving stream.

Class D-6, Interactive Play Attractions: Only water treatment and filtration for these attractions are within the scope of this standard. A manufactured water play device or a combination of water-based play devices in which water flow volumes, pressures, or patterns are intended to be varied by the bather without negatively influencing the hydraulic conditions of other connected devices. Class D-6 attractions may incorporate devices or activities such as slides, climbing and crawling structures, visual effects, user-actuated mechanical devices and other elements of bather-driven and bather-controlled play. Class D-6 attractions do not incorporate captured or standing water greater than 12 inches deep as part of the bather activity area.