



Designation: **F2461 – 16<sup>e1</sup>** **F2461 – 18**

## Standard Practice for Manufacture, Construction, Operation, and Maintenance of Aquatic Play Equipment<sup>1</sup>

This standard is issued under the fixed designation F2461; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

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<sup>e1</sup> NOTE—Editorially corrected references to ASTM standards in January 2017.

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### 1. Scope

1.1 This practice covers information for manufacture, construction, operations and maintenance of aquatic play equipment and provides safety performance standards for various types of public aquatic play components and aquatic play composite structures.

#### 1.2 Inclusions:

1.2.1 Climbable and climb-resistant aquatic play components, composite aquatic play structures, user controls, water sprays, fountains, and slides that occur on wet decks and wading, swimming or leisure pools. The play components specified herein occur for use in aquatic play areas.

1.2.2 Play equipment, fall zones, use zones for wet decks, wading pools, swimming pools and leisure pools.

1.2.3 This standard is intended to apply to Aquatic Play Equipment that is located in and around re-circulated and potable water recreational facilities. Such facilities include but are not limited to amusement parks, theme parks, water parks, family entertainment centers, municipal swimming pools and municipal parks.

1.2.4 Waterslides 6 ft in height or smaller.

#### 1.3 Exclusions:

1.3.1 Playground equipment that does not have an entry or an exit onto or into a wet deck, wading pool, swimming pool or aquatic recreation pool.

1.3.2 Home playground or home pool equipment or play equipment as scoped in Consumer Safety Performance Specification **F1148** and ANSI/NSPI-5.

1.3.3 Waterslides as scoped in Practice **F2376**.

1.3.4 Flotation devices used on water slides or in swimming pools.

1.3.5 Swimming pools as specified by ANSI/NSPI-1 or ANSI/IAF-9.

1.3.6 Products or facility elements specifically designed to provide access to and from pools for people with disabilities.

1.3.7 Water rides such as log flumes, raft rides, inner tube rides, waterslides or other attractions where the participant sits in a vehicle or is physically propelled or moved by or with water.

1.3.8 Sports equipment, fitness equipment, and diving equipment.

#### 1.4 Compliance:

1.4.1 Where water is indirectly or directly added or applied to Consumer Safety Performance Specification **F1487** play equipment, the equipment shall comply with this standard. Where a requirement for compliance to a section of the Consumer Safety Performance Specification **F1487** standard is required by this standard, the section number is preceded with the standard's designation.

1.4.2 Soft contained play structures with aquatic play components shall comply with Safety Performance Specification **F1918** except as modified by this standard.

1.4.3 Aquatic play components and composite play structures represented, as complying with this safety performance standard shall meet all applicable requirements specified herein. Anyone representing compliance with this standard shall keep such essential records as are necessary to document any claim that the requirements within this standard have been met.

1.5 This standard includes the following sections:

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<sup>1</sup> This practice is under the jurisdiction of ASTM Committee **F24** on Amusement Rides and Devices and is the direct responsibility of Subcommittee **F24.70** on Water Related Amusement Rides and Devices.

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1.6 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard. (The conversion factor from inch-pound to metric units is 1 in. = 25.4 mm, and 1 lb = 4.4482 N.)

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.8 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

### 2.1 ASTM Standards:<sup>2</sup>

- F770 Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices
- F853 Practice for Maintenance Procedures for Amusement Rides and Devices (Withdrawn 2014)<sup>3</sup>
- F1148 Consumer Safety Performance Specification for Home Playground Equipment
- F1193 Practice for Quality, Manufacture, and Construction of Amusement Rides and Devices
- F1292 Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment
- F1487 Consumer Safety Performance Specification for Playground Equipment for Public Use
- F1918 Safety Performance Specification for Soft Contained Play Equipment
- F2291 Practice for Design of Amusement Rides and Devices
- F2376 Practice for Classification, Design, Manufacture, Construction, and Operation of Water Slide Systems

### 2.2 ANSI Standards:<sup>4</sup>

- ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities
- ANSI A10.11 Personal and Debris Nets
- ANSI/IAF-9 American National Standard for Aquatic Recreation Facilities
- ANSI/NSPI-1 American National Standard for Public Swimming Pools
- ANSI/NSPI-5 American National Standard for Residential Inground Swimming Pools

### 2.3 Other Standards:

- NFPA 70 National Electric Code (NEC)<sup>5</sup>
- OSHA Subpart D 1910.28 Duty to have fall protection and falling object protection<sup>6</sup>

## 3. Terminology

3.1 Reserved for future inclusions.

## 4. Manufacturing and Materials

4.1 Aquatic play components shall comply with Consumer Safety Performance Specification F1487 Section 4 except as modified by this standard.

4.2 **Durability**—Aquatic play components and composite play systems shall be manufactured and constructed only of materials that have a demonstrated durability in the aquatic playground, swimming pool or similar setting.

4.2.1 Any new materials shall have documented performance and material properties or tested accordingly for durability by the equipment manufacturer.

4.3 **Compatibility**—Materials used in the manufacture of aquatic play components shall not create an unsanitary or toxic condition for users and the aquatic environment in which they are installed.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

<sup>4</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

<sup>5</sup> Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169-7471, <http://www.nfpa.org>.

<sup>6</sup> Available from Occupational Safety and Health Administration (OSHA), 200 Constitution Ave., NW, Washington, DC 20210, <http://www.osha.gov>.