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# Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs<sup>1</sup>

This standard is issued under the fixed designation F1346; 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.

## 1. Scope

1.1 This specification establishes requirements for safety covers for swimming pools, spas, hot tubs, and wading pools (hereinafter referred to as pools, unless otherwise specified). When correctly installed and used in accordance with the manufacturer's instructions, this specification is intended to reduce the risk of drowning by inhibiting the access of children under five years of age to the water.

1.2 This specification includes performance tests to demonstrate the compliance or noncompliance to requirements herein stated for safety covers. It also includes marking requirements for all covers.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values in parentheses are given for information only.

1.4 The following safety hazards caveat pertains only to the test methods section, Section 9, of this specification: *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.*

1.5 *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 NFPA Document:

National Electrical Code, Article 680-26<sup>2</sup>

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F15 on Consumer Products and is the direct responsibility of Subcommittee F15.28 on Covers for Pools, Spas and Hot Tubs.

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<sup>2</sup> Available from National Fire Protection Assoc., Batterymarch Park, Quincy, MA 02269.

## 3. Terminology

### 3.1 Definitions of Terms Specific to This Standard:

3.1.1 *appurtenances*—subordinate parts or adjunct accessory components to the cover such as hardware including buckles, straps, ties, springs, anchors, tracks, rollers, lifting arms, and the like.

3.1.2 *automatic cover*—a cover which can be placed over the water area and removed with a motorized mechanism actuated by a suitable control mechanism. See also *power safety cover (PSC)*, *other cover (OC)*.

3.1.3 *barrier*—something that restrains or obstructs access to the body of water.

3.1.4 *blanket*—a material used for thermal insulation. See also *solar energy blanket*.

3.1.5 *cover*—something that covers, protects or shelters, or a combination thereof, a swimming pool, spa, or hot tub.

3.1.6 *debris cover*—a cover with attendant appurtenances positioned over the pool area which permits the cover to prevent debris, such as foliage, dirt, windblown trash, and the like from entering the pool. It is intended to be completely removed before the entry of bathers. See also *other covers (OC)*.

3.1.7 *decks*—those areas abutting a pool, spa, or hot tub that are specifically constructed or installed (for example, of wood, concrete, brick, stone, and the like) for use by bathers for sitting, standing or walking and may also act as a base for supports for covers.

3.1.8 *dome*—a semipermanent enclosure supported by trusses, or positive air pressure erected over the pool area to provide temperature and atmospheric control over the pool environment.

3.1.9 *energy conservation*—the reduction of heat loss from pool water through air convection or evaporative cooling, or both.

3.1.10 *hot tub*—a spa constructed of wood with sides and bottoms formed separately; and the whole shape joined together by pressure from surrounding hoops, bands or rods; as distinct from spa units formed of plastic, concrete, metal, or other materials.

3.1.11 *inaccessible locations*—a location at least 5 ft (1.5 m) above the ground with no other access such as hand or footholds which would permit a child to reach the location.

3.1.12 *manual cover*—a cover which requires it to be placed over the water area by hand. See also *manual safety cover (MSC)*, and *other covers (OC)*.

3.1.13 *markings*—the application of numbers, letters, labels, tags, symbols or colors to provide identification and safety information and to expedite handling during shipment and storage.

3.1.14 *manual safety cover (MSC)*—a barrier which requires it to be placed over the water manually. Provides a high level of safety for children under the age of five by inhibiting their access to the water.

3.1.15 *other covers (OC)*—includes any cover type not incorporated in the other two classifications; PSC, MSC. They are not intended to serve as a barrier for children under the age of five.

3.1.16 *power safety cover (PSC)*—a barrier which can be placed over the water area and removed with a motorized mechanism actuated by a suitable control mechanism. Provides a high level of safety for children under the age of five by inhibiting their access to the water.

3.1.17 *safety cover*—a barrier (intended to be completely removed before entry of bathers), for swimming pools, spas, hot tubs or wading pools, attendant appurtenances and/or anchoring mechanisms which reduces—when properly labeled, installed, used and maintained in accordance with the manufacturers' published instructions—the risk of drowning of children under five years of age, by inhibiting their access to the contained body of water, and by providing for the removal of any substantially hazardous level of collected surface water. See also *power safety cover (PSC)*, and *manual safety cover (MSC)*.

3.1.18 *solar energy blankets*—a cover which is a floating translucent (not transparent) heat insulating sheet incorporating, for example, encapsulated air bubbles or similar low heat transfer (floating) sheet material whose purpose is to inhibit heat dissipation from the pool water surface through air convection or evaporative cooling. The sheet material, customarily translucent (not transparent) to permit the transfer of solar radiation energy directly to the pool water at all depths and intended for day and night use, is cut to the shape of the pool and is not affixed to the pool structure. It is intended to be completely removed before the entry of bathers.

3.1.19 *energy conservation blanket*—a cover which is a floating heat insulating sheet material incorporating, for example, a cellular foam or similar low-heat transfer material whose purpose is to inhibit heat loss from the covered water, through air convection or evaporative cooling, or both. Such materials are customarily cut to the shape of the pool and are intended for a night covering. The blanket is not affixed to the pool structure. It is intended to be completely removed before the entry of bathers.

3.1.20 *wading pool*—a shallow pool intended for wading, not swimming.

3.1.21 *waterline*—the waterline shall be defined in one of the following ways:

3.1.22 *skimmer system*—the water line shall be at the mid-point of the operating range of the skimmers.

3.1.23 *overflow system*—the waterline shall be at the top of the overflow outlet.

#### 4. Cover Classifications and Minimum Qualification Criteria

4.1 *Power Safety Cover (PSC)*—Provides a high level of safety for children under the age of five by inhibiting their access to the water.

4.1.1 Must satisfy 5.1 – 5.3, 6.1 – 6.5, 7.1 – 7.4, 8.1, 8.2, 8.4 – 8.12, 9.1 – 9.4, 10.1 – 10.4, and all subsections.

4.2 *Manual Safety Cover (MSC)*—Provides a high level of safety for children under the age of five by inhibiting their access to the water. May require a longer period of time to be fully secured.

4.2.1 Must satisfy 5.1 – 5.3, 6.1 – 6.5, 7.1 – 7.4, 8.1, 8.2, 8.4 – 8.12, 9.1 – 9.4, and all subsections.

4.3 *Other Covers (OC)*—Includes any cover type not incorporated in the other two categories MSC, PSC. They are not intended to serve as a barrier for children under the age of five. Design characteristics may be hazardous when used in the presence of children under the age of five.

4.3.1 Shall satisfy 5.1 – 5.3, 8.1 – 8.3, 8.5 – 8.12, and all subsections.

#### 5. Materials and Manufacture

5.1 Only materials not known to be harmful to health, within the intended application, shall be used.

5.2 All materials and components shall be durable and satisfactory for the intended purpose under the conditions normally prevailing at the site.

5.3 The cover shall be manufactured or fabricated, or both, in accordance with generally accepted, good manufacturing practices.

#### 6. General Requirements for Safety Covers

6.1 *Installation/Use of Safety Covers*—Unless installed by the manufacturer, or responsible parties, or both, detailed instructions for installation shall be given in a form included in the packaging or a label, or both, attached to the cover.

6.2 Labels attached to the cover shall meet the general requirements described in 8.5.1 and 8.8 – 8.8.2.

6.3 *Markings for Safety Covers Shall Include:*

6.3.1 the manufacturer's name,

6.3.2 date manufactured or installed, and

6.3.3 instructions to consumers to inspect the cover for premature wear or deterioration.

6.3.4 Labels attached to covers shall meet the general requirements described in 8.4.1, 8.7 – 8.8.1, and 8.9.

6.4 *Fastening Mechanisms or Devices*—Ties, attachment points, anchors, anchorage, and controls for automatic covers or other means of fastening a cover shall include provisions

such as keys, combination locks, special tools, devices, or inaccessible locations, and the like, to inhibit children under five years of age from removing or operating the cover. When subjected to the load and perimeter deflection tests described in 9.1 and 9.2, all fastening devices shall remain in their intended, secured or closed, or both, position. After the test, the intended performance of the device should not be impaired.

6.5 *Openings*—The cover shall be designed in such a way that, when it is tested by the test method described in 9.4, any opening in the major component or between the edge of the cover and the deck surface or coping wall, or both, and the top surface of the spa or pool does not allow the test object to pass through. The test object shall not gain access to the water, or be subject to entrapment.

6.6 Seams, ties or welds in the cover shall show no signs of damage, which will impair intended performance of the device when the cover is tested by the methods described in 9.1 – 9.4.

**7. Performance Requirements for Safety Covers**

7.1 *Static Load*—In the case of a pool with a width or diameter greater than 8 ft (2.4 m) from the periphery, the cover shall be able to hold a weight of 485 lb (220.0 kg) (2 adults and 1 child) to permit a rescue operation.

7.1.1 In the case of a pool with a width or diameter not greater than 8 ft (2.4 m) the cover shall withstand the weight of 275 lb (125 kg) (weight of a child and an adult). Compliance shall be determined by the test method described in 9.1.

7.2 *Perimeter Deflection*—The cover shall be designed in such a way that, when it is tested by the test method described in 9.2, deflection of the cover does not allow the test object to pass between the cover and the side of the pool, or to gain access to the water.

7.3 *Surface Drainage*—The cover shall be so constructed, or incorporate a system, or have an auxiliary system provided, that when used in accordance with the manufacturer’s instructions, shall drain substantially all standing water from the cover within a period of 30 min after cessation of normal rainfall. Compliance shall be determined by the test in 9.3.

7.4 *Opening Tests*—The tests shall be conducted by the test method described in 9.4 to demonstrate that any opening in the major component or between the edge of the cover and the deck surface or coping wall, or both, and the top surface of the pool or the top surface of the spa is sufficiently small and strong to prevent the opening from being forced to a size that will allow the test object to pass through.

**8. Minimum Label Requirements for All Covers for Swimming Pools, Spas, and Hot Tubs**

8.1 *Product Label*—All covers shall be labeled/marked to identify manufacturers or other responsible parties (such as private label distributors), or both. Labels attached to covers shall meet the general requirements described in 8.5.1 and 8.8 – 8.8.2.

8.2 *Warning Labels*—All covers shall be required to have attached the following warning label:

8.2.1 *Signal Word*—**WARNING.**

8.2.2 *Safety Alert Symbol*—Preceding the signal word there shall be triangle with an exclamation point inside the triangle.

8.2.2.1 *Word Message*—The standard word message shall be AVOID DROWNING RISK which shall be the first message to appear directly under the signal word.

8.2.2.2 *Additional Word Message Statement*—Covers with any of the outlined hazards in Fig. 1 shall list all applicable warning statements on the label.

8.3 *Color*—Non-safety cover warning label.

8.3.1 *Signal Word*—Black letters with orange background.

8.3.2 *Safety Alert Symbol*—Black triangle with orange exclamation point.

8.3.3 *Word Message*—Black lettering on white background or white letters on black background.

8.4 *Color*—Safety cover warning label.

8.4.1 Colors assigned to the signal word panel may also be used for the message word panel provided the panel colors contrast with the lettering of the label. This is applicable to covers conforming with the PSC and MSC classifications only.

8.5 *Warning Label*—Letter size.

"HAZARD/WARNING STATEMENT CHART"	
If This Hazard Exists:	Add This Warning Statement:
*Will not support weight (as defined in this specification) Nonsecured or improperly secured covers	*Stay off cover—will not support weight.
*Concealment by slipping under cover	*Keep children away. Children or objects cannot be seen under cover.
*Drowning on top of cover in accumulated surface water (as defined in this specification)	*Remove Standing Water—child can drown on top of cover.
*Concealment, Entrapment—Drowning under cover	*Remove cover(s) completely before entry of bathers—entrapment possible.
*General requirement for all covers	*Non-secured or improperly secured covers are a hazard.
*Option to above for Safety Covers	*Failure to follow all instructions may result in injury or drowning.
*Cover does not meet all requirements of this specification for PSC, MSC.	*This is not a Safety Cover.

FIG. 1 Hazard/Warning Statement Chart