

# ***S.R.Smith***<sup>TM</sup>

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***WORLD LEADER IN SWIMMING POOL DECK ACCESSORIES***

**SELECTED SECTIONS FROM**

***American National Standard for  
Residential Inground Swimming Pools ANSI/NSPI-5 2003***

PERTAINING TO  
APPROPRIATE POOL TYPES FOR DIVING EQUIPMENT  
MANUFACTURED BY S.R. SMITH, LLC.

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For a copy of the complete ANSI/NSPI-5 2003 American National Standard for Residential Inground Swimming Pools contact:

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**[www.nspi.org](http://www.nspi.org)**

**5 Pool dimensions and tolerances**

**5.1 General requirements.** Design dimensions shall comply with specifications in this standard. The pool shall be constructed to these design dimensions within the tolerances listed in 5.1.1.

**5.1.1 Construction tolerances.** There shall be construction tolerances allowed on dimensional designs. The overall length, width and depth shall be limited to a tolerance of plus or minus 3 inches ( $\pm 7.6$  cm). All other dimensions shall be limited to a tolerance of plus or minus 2 inches ( $\pm 5.1$  cm), unless otherwise specified.

**5.2 Perimeter shape.** No limits are specified for shape of pools except that consideration shall be given to shape from the standpoint of circulation of the swimming pool water and safety to the user.

**5.3 Walls - requirements**

**5.3.1** Walls in the shallow area and deep area of the pool shall not slope greater than  $11^\circ$  (1:5 slope ratio) to a transition point. The transition point shall not be less than 2 feet and 9 inches (83.8 cm) below the waterline. See figure 1.

**5.3.2** As shown in figure 2, at the depths of (a) and (b), the walls are permitted to join the floor.

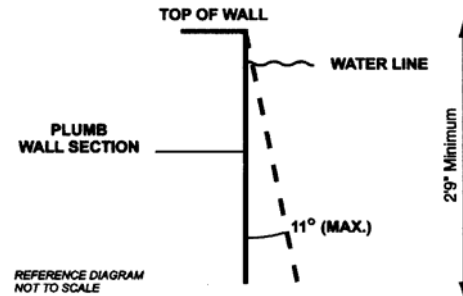


Figure 1- Maximum allowable wall slope

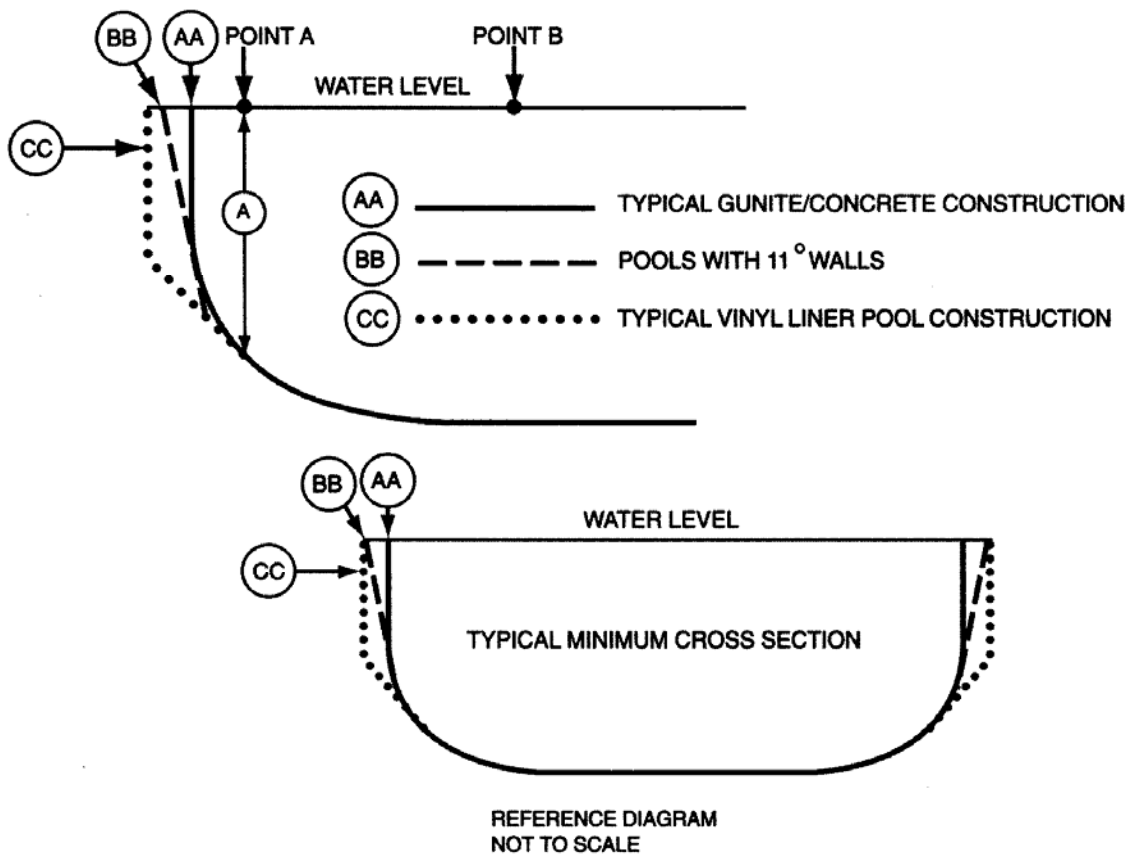


Figure 2- Typical pool design configurations

5.3.3 The walls of Type I pool, when defining the minimum diving water envelope, shall be plumb or outside of Type 1 water geometry. (See figure 3, table 1.)

5.4 Maximum allowable wall slope

5.4.1 Maximum allowable wall slope shall not slope greater than 11° from plumb.

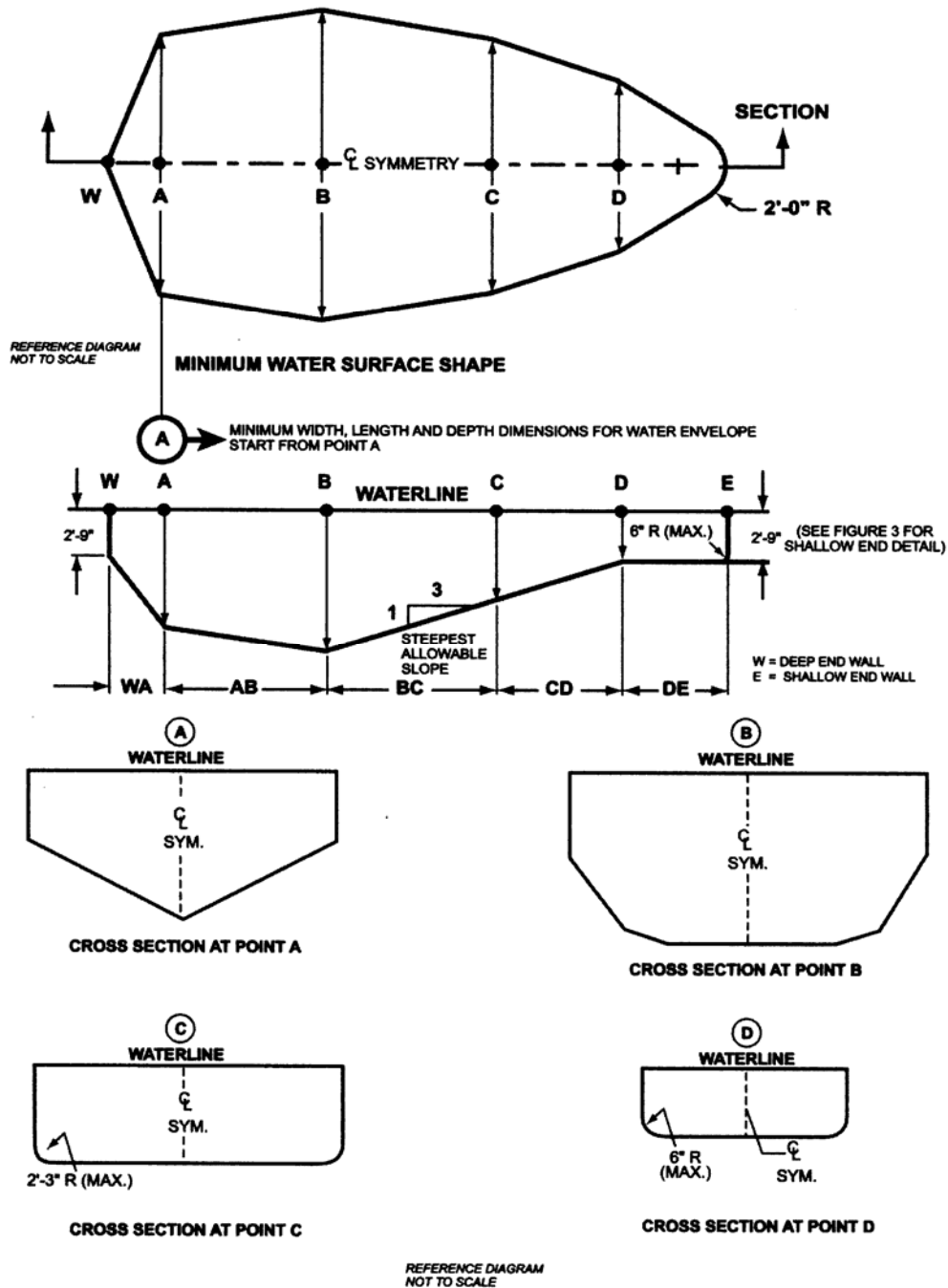


Figure 3- Minimum water envelope

Table 1- Minimum water envelope

| Pool type | Minimum depths at point                     |       |       |       | Minimum widths at point |        |        |       | Minimum lengths between points |       |        |        |       |        |
|-----------|---|-------|-------|-------|-------------------------|--------|--------|-------|--------------------------------|-------|--------|--------|-------|--------|
|           | A   | B     | C     | D     | A                       | B      | C      | D     | WA                             | AB    | BC     | CD*    | DE    | WE     |
| O         | Manufactured diving equipment is prohibited |       |       |       |                         |        |        |       |                                |       |        |        |       |        |
| I         | 6'-0"                                       | 7'-6" | 5'-0" | 2'-9" | 10'-0"                  | 12'-0" | 10'-0" | 8'-0" | 1'-6"                          | 7'-0" | 7'-6"  | Varies | 6'-0" | 28'-9" |
| II        | 6'-0"                                       | 7'-6" | 5'-0" | 2'-9" | 12'-0"                  | 15'-0" | 12'-0" | 8'-0" | 1'-6"                          | 7'-0" | 7'-6"  | Varies | 6'-0" | 28'-9" |
| III       | 6'-10"                                      | 8'-0" | 5'-0" | 2'-9" | 12'-0"                  | 15'-0" | 12'-0" | 8'-0" | 2'-0"                          | 7'-6" | 9'-0"  | Varies | 6'-0" | 31'-3" |
| IV        | 7'-8"                                       | 8'-6" | 5'-0" | 2'-9" | 15'-0"                  | 18'-0" | 15'-0" | 9'-0" | 2'-6"                          | 8'-0" | 10'-6" | Varies | 6'-0" | 33'-9" |
| V         | 8'-6"                                       | 9'-0" | 5'-0" | 2'-9" | 15'-0"                  | 18'-0" | 15'-0" | 9'-0" | 3'-0"                          | 9'-0" | 12'-0" | Varies | 6'-0" | 36'-9" |

**NOTE:**

- \*Minimum length between points CD may vary based upon water depth at point D and the slope between points C & D.
- Figure 3 drawings are not to scale. (For pool types, see Glossary.)

**5.5 Offset ledges**

**5.5.1** Offset ledges shall be a maximum of 8 inches (20.3 cm) wide.

**5.5.1.1** Offset ledges, located less than 42 inches (1067 mm) below waterline shall be proportionately less than 8 inches (20.3 cm) wide and fall within 11° from plumb, measured from the top of the waterline. See figure 4.

**5.6 Floor slopes.** Floor slopes shall be reasonably uniform and comply with 5.6.1 through 5.6.3.

**5.6.1** The slope of the floor from the shallow end wall towards the deep area shall not exceed 1 foot in 7 feet (30 cm: 213 cm) to the point of the first slope change as shown in figure 5.

**5.6.2** Changes in slope between shallow and deep areas shall be at a minimum water depth of 2 feet 9 inches (83.8 cm) and be at least six feet (182.9 cm) from the shallow end, except as specified in 6.3.

**5.6.3** The slope of the floor from the point of the first slope change toward the deep end shall not exceed 1 foot in 3 feet (30 cm: 91 cm).

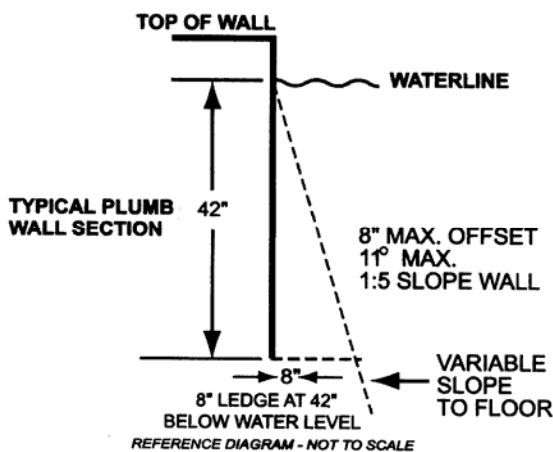


Figure 4- Offset ledges

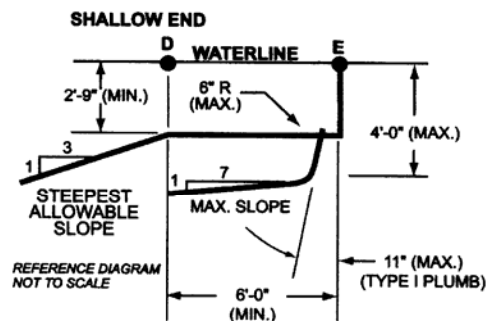


Figure 5- Shallow end depths

**5.7 Shallow end water depths.** Water depth in the shallow area shall be a minimum of 2 feet 9 inches (83.8 cm) except for those locations specified in 6.3 "Shallow End Detail for Beach and Sloping Entries." The water depth at the shallowest point shall not exceed four feet (121.9 cm) as shown in figure 5.

**5.8 Manufactured diving equipment for in-ground swimming pools (diving board/stand combination or manufactured platform)**

Note – For consumer product safety information, warning, and education programs, See appendices D, E, and F.

**5.8.1** When manufactured diving equipment is installed, it shall conform to the specifications set forth in 5.8 through 5.9 and shall be located in the deep area of the pool so as to provide the minimum, dimensions as shown in 5.9.

**5.8.1.1** Manufactured diving equipment shall not be installed on Type 0 pools.

**5.8.2 Diving equipment.** Diving equipment shall be designed for swimming pool use and shall be installed in accordance with the manufacturer's specifications.

**5.8.2.1** Diving equipment installation and use instructions shall be provided by the diving equipment manufacturer and shall specify the minimum water dimensions required for each diving board and diving stand combination. They may refer to the water envelopes type of their choice by dimensionally relating their products to Point A on the water envelopes as shown in figure 3 and table 1, 5.9.1 through 5.9.3.

**5.8.2.2** Diving equipment shall be permanently labeled and affixed to the diving equipment or jump boards and shall include but not be limited to:

- manufacturer's name and address;
- date of manufacture;
- minimum water envelope required for each diving board and diving stand combination; and
- maximum weight limitations of the user as specified by the board manufacturer.

**5.8.2.3** Diving equipment shall have slip-resisting tread surfaces.

**5.9** Figure 3 contains suggested drawings and diagrams for minimum water envelope for swimming

pools designated type I - V. Individual pool types are shown in figure 3 and table 1.

**5.9.1** Location of point A. Point A shall be defined as a point located on the minimum water envelopes.

**5.9.1.1 Point A.** Point A is a construction location nearest the deep end wall where the minimum water depth is satisfied.

**5.9.1.2** Point A as shown in figure 3 and table 1 shall be the reference point of origin for all dimensions defining the minimum water envelope.

**5.9.2** Type 0 pool (where diving is prohibited) shall not be limited in width, length, or water depth except as specifically provided for in this standard.

**5.9.3 Location of equipment and pool features in the minimum water envelope.** If the pool is designed for use with diving equipment, steps, pool stairs, ladders, underwater benches, special features and other accessory items shall be located outside the minimum water envelope. (See figure 6)

**5.9.4 Typical pool design configurations.** Vinyl liner, shotcrete, fiberglass and concrete constructions shall conform to, but are not limited to, the typical pool configurations shown in figure 2.

**5.10 Stationary diving platform(s) and diving rock(s).** Stationary diving platform(s) and diving rock(s) built on site shall be allowed to be flush with the wall and located in the diving area of the pool. Point A shall be in front of the wall at the platform or diving rock centerline.

Note – For consumer product safety information, warning, and education programs, See appendices D, E, and F.

**5.10.1** The maximum height of the stationary diving platform or diving rock above the waterline shall be as follows:

- Pool Type I 42 inches (106.7 cm);
- Pool Type II 42 inches (106.7 cm);
- Pool Type III 50 inches (127.0 cm);
- Pool Type IV 60 inches (152.4 cm); or
- Pool Type V 69 inches (175.3 cm)

**5.10.2** Stationary diving platform(s) and diving rock(s) shall not be permitted on Pool Type 0.

**5.10.3** The diving equipment manufacturer shall specify minimum headroom above water.

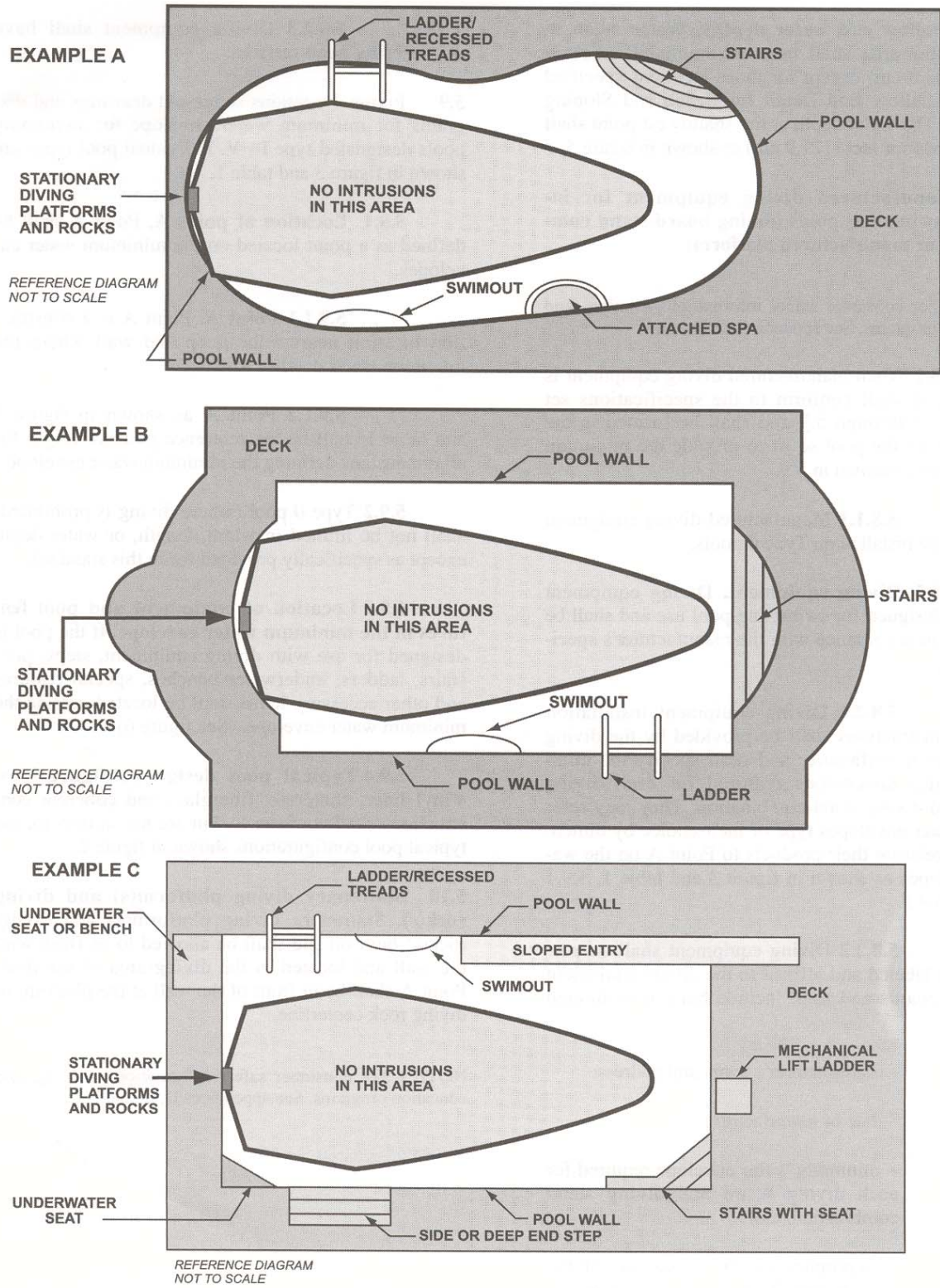


Figure 6- Top view examples of accessory equipment and pool features prohibited in the water envelope

(This appendix is not part of the American National Standard ANSI/NSPI-5 2003, but is included for information only)

## Appendix D

### RECOMMENDATIONS TO WARN AGAINST SHALLOW WATER DIVING

Recommended methods to warn against shallow water diving may include but not be limited to:

#### A. Safety Signs

*The use of warning signs, as a device to warn against shallow water diving is still an open question before the Human Factors Society and others as to whether or not signage is an effective means that will modify human behavior to prevent accidents.*

*If warning signs are chosen as a means to warn against shallow water diving, the signage should be in compliance with ANSI Z535.1-1998 Series of standards for safety signs and colors or the latest revision.*



This sign is based upon a study entitled "*Design of Swimming Pool Warnings*". This sign has been reviewed by the staff of the U.S. Consumer Product Safety Commission and supports its use.

#### B. Additional Signage Use

The ANSI-Z535 1998 Series of Standards reflects the consensus of various experts on warning sign appearance and content. Signage, which is consistent with the ANSI-Z535 Standards, is permitted to be added to components, equipment, facilities or installations, to provide additional information.

Manufacturers are permitted to either affix additional signage to their products or packaging, or to supply the signage with the product to be affixed at the time of installation.



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## Appendix E

### SAFETY CONSIDERATIONS AND WARNING RECOMMENDATIONS

The National Spa and Pool Institute (NSPI) suggests that the builders/installers of swimming pools advise the initial owner/operator of a Residential Pool of the following:

**Warning Recommendations:** The NSPI suggests the builder/installer advise the pool owner of the risk of drowning, especially for children under the age of five, and the risk of diving into shallow water in one or more of the following ways: **verbally, through publications or signage.** The following are suggested recommendations:

**Lifesaving Equipment:** The NSPI suggests the builder/installer advise the pool owner/operator that basic lifesaving equipment including one or more of the following items should be on hand at all times:

A light, strong, rigid pole not less than twelve feet (12') long.

A minimum one-fourth inch (6 mm) diameter throwing rope as long as one and one-half (1 1/2) times the maximum width of the pool or fifty feet (15.2 meters), whichever is less, which has been firmly attached to a Coast Guard approved ring buoy having an outside diameter of approximately fifteen inches (38.1 cm), or some other similar flotation device.

**Safety Considerations for Pool Owner/Operators:** For additional safety information see [www.nspi.org](http://www.nspi.org).

**This standard does not replace good judgment and personal responsibility. In permitting use of the pool by others, owners/operators must consider the skill, attitude, training and experience of the expected user. It is the pool owner/operator's responsibility to learn, understand and enforce these basic safety principles and rules:**

- Encourage children to learn how to swim.
- Never allow diving, jumping or sliding into shallow water.

- Adult supervision is always required when children five (5) years or younger are present.
- Encourage parents to learn CPR.
- Encourage children to never swim alone.
- Keep all electrical radios, speakers and other appliances away from the swimming pool.
- Do not allow roughhousing and horseplay.
- Keep deck clean and clear of objects that may create a hazard.
- Keep all breakable objects out of the pool area.
- Alcohol consumption and pool activities do not mix. Never allow anyone to swim, dive or slide under the influence of alcohol or drugs.

Do's and Don'ts for Diving into swimming pools with manufactured diving equipment, diving rocks, and stationary diving platforms:

- **Do** know the shape of the pool bottom and the water depth before you dive or slide headfirst.
- **Do** plan your path to avoid submerged obstacles, surface objects or other swimmers.
- **Do** hold your head up, arms up, and **steer up** with your hands.
- **Do** practice carefully before you dive or slide.
- **Do** test the diving board for its spring before using.
- **Do** remember that when you dive down, you must steer up.
- **Do** dive straight ahead - not off the side of the diving board.
- **Don't** drink and dive.
- **Don't** dive or slide headfirst in the shallow part of the pool.
- **Don't** dive across the narrow part of the pool. **Don't** run and dive.
- **Don't** dive from any place that is not specifically designed for diving.
- **Don't** engage in horseplay on diving or sliding equipment.
- **Don't** use diving equipment as a trampoline. **Don't** do a back dive.
- **Don't** try fancy dives; keep the dives simple. **Don't** dive or slide headfirst at or through objects such as inner tubes.
- **Don't** put diving or sliding equipment on a pool that wasn't designed for it.
- **Don't** swim or dive alone.
- **Don't** dive into unfamiliar bodies of water.

**Rules for General Use of Swimming Pool Slides.\*  
Under all circumstances you should prohibit:**

- Prohibit all headfirst entry from slide.
- Horseplay.
- Any slide entries by non-swimmers into deep water, to protect them from drowning.
- Standing on the top of a slide or outside the guardrails.
- Jumping from a slide.
- Diving from a slide.
- Sliding into areas with submerged obstacles, surface objects or other swimmers.

\*Consult safe use instructions of the pool slide manufacturer

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**Appendix F**

**SAFETY BROCHURES AND EDUCATION PROGRAMS**

Consumer awareness information is available from the following sources:

- *"The Sensible Way to Enjoy Your Inground Swimming Pool"* ... Published by the NSPI
- *"Children Aren't Waterproof"*... Published by the NSPI
- *"Layers of Protection"*... Published by the NSPI
- *"Pool and Spa Emergency Procedures for Infants and Children"*... Published by the NSPI
- *"Knowing How to Dive"*... Published by the National Spa and Pool Institute (NSPI)

**Copies of the above brochures are available free from the NSPI at 1 800 323-3996.**

Also go to NSPI's website at [www.nspi.org](http://www.nspi.org) and consult "Consumer Information".

**SAFETY EDUCATION PROGRAMS AND MATERIALS**

Educational programs and materials (i.e., seminars, workshops, brochures, videos, instructional guides, etc.) are available from NSPI, NSPF, other aquatic safety groups, and by private firms. As a means of communicating useful safety information to pool owners/operators and users, industry members are permitted to provide such information to owners/operators and to request or require owners/operators to sign a statement that they have received, read and will follow the guidelines.

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