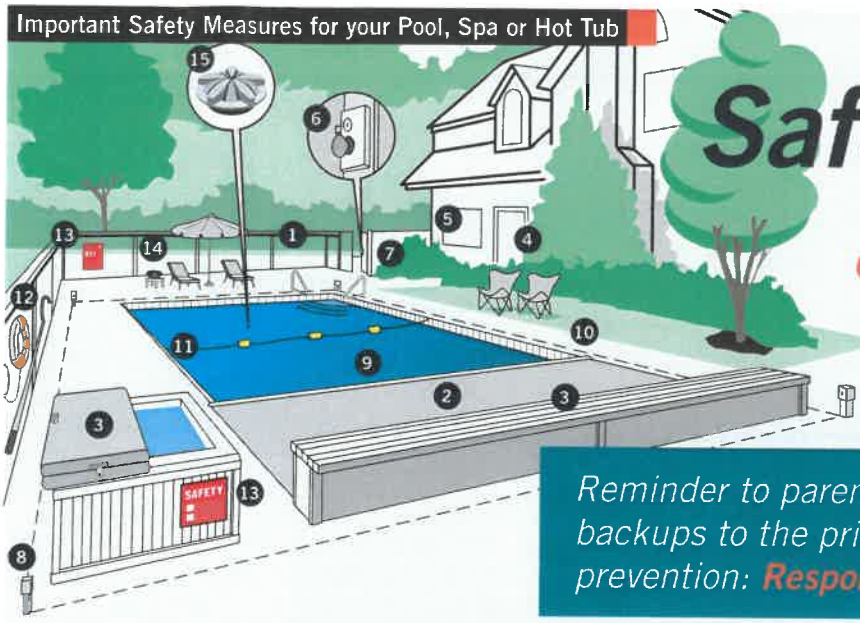
Important Safety Measures for your Pool, Spa or Hot Tub



Safe Pools, Spas and Hot Tubs Save Lives

Reminder to parents that these "layers" are backups to the primary means of accident prevention: ***Responsible Adult Supervision***

1. **Barrier Requirements (fencing)**
   Purpose: To isolate the swimming pool by way of a minimum four foot high enclosure.
   Types: a. Chain link; b. Wooden picket (if non climbable); c. Ornamental; d. Portable fencing; e. Natural Barrier (edge of lake or other natural body of water); f. Natural topography (mountains or natural rock formations), if permitted by local codes.
2. **Automatic Power Safety Cover**
   Purpose: A pool cover that is placed over the water area, and is opened and closed with a motorized mechanism activated by a control switch.
   Types: Shall be listed and labelled in accordance with ASTM F1346.
3. **Manual Safety Covers**
   Purpose: An impenetrable covering that completely covers the pool, spa, or hot tub, blocking access to water.
   Types: Shall be listed and labelled in accordance with ASTM F1346.
4. **Door Exit Alarms**
   Purpose: An alarm that produces an audible warning when a child opens a door, screen or window.
   Types: The alarm shall be listed and labelled as a water hazard entrance alarm in accordance with UL 2017.
5. **Self-Closing/Self Latching Devices for Doors and Latching Devices for windows**
   Purpose: An approved means of protection, such as, self-closing doors with self-latching devices can be used to comply with Section 305.4 of the 2012 ISPSC, provided that the degree of protection afforded is not less than the protection afforded by item 3 & 4 above.
   Types: A latch release mechanism that is not less than 54" (1372mm) above the floor.
6. **Fence Gate Closer & Latch:**
   Purpose: To close and latch fence gates securely, making a pool, spa, or hot tub inaccessible to a child.
   Types: Self latching and be located on the vessel side of the gate at least three inches (76mm) below the top of the gate.
7. **Fence Gate Alarms:**
   Purpose: Produces an audible warning when a fence gate is opened.
8. **Infrared Detectors:**
   Purpose: Wireless detection alarm that sounds when the area around the pool perimeter is entered.
   Type: a. Light-beam b. Body energy.
9. **Pool Alarms:**
   Purpose: An alarm placed in the pool that sounds upon detection of accidental or unauthorized entrance into the water. While the alarm provides an immediate warning, it does not substitute for the fences, door alarms and safety covers required by this code.
   Type: a. Surface water (wave motion); b. Pressure wave (acoustic); c. Electronic monitoring system.
10. **Child Alarms:**
    Purpose: An alarm clipped on the child that sounds when the child exceeds a certain distance or becomes submerged in water.
    Types: Clip on transmitter with a in-home receiver.
11. **Rope & Float Line**
    A rope & float line should be placed across the pool, alerting swimmers to the separation of the deep end from the shallow end of the pool. See Section 811.1 of the 2015 ISPSC for specific details.
12. **Life Ring, Shepard's Hook**
    Always keep basic lifesaving equipment by the pool and know how to use it. These can be used to pull someone in trouble to safety.
13. **Posted Emergency Information**
    Post all CPR, other emergency information and warning signs, as well as the emergency phone number "911"(or other emergency medical service number), near the pool, spa, or hot tub.
14. **Outside Telephone**
    Keep a cordless or poolside telephone within easy reach of the pool area for emergency calls. It also means parents don't have to leave children unattended while they answer the phone.
15. **Anti-Entrapment Drain Covers and Fittings**
    All pool and hot tub drains (suction outlets) must have a cover or grate that meets industry standards for suction fittings marked with "VGB 2008" indicating compliance with ANSI/APSP-16 2011. A cover protects people from entrapment, including suction. Without the cover, some part of a person's body (especially a limb) may be trapped, causing injury or drowning. If a cover is broken, loose or missing, the pool should be closed immediately until the drain cover is replaced or repaired by a professional. No one should be allowed to play with a drain cover or near a drain.
    Outlet Configuration
    Pools and spas with drains should have more than one drain (suction outlet), spaced a minimum of 3 feet apart; one or more un-lockable drains or no main drain.
    Vacuum Release or Vented System
    Pools and spas with a single drain, other than an un-blockable outlet must have one of the following: A safety vacuum release system (SVRS); an engineered vent system; a gravity drainage system; or other safety features that comply with consensus standards (ANSI/APSP/ICC 7-2013).
    Pool Cleaner Fittings
    Pool and spas with wall vacuum fittings must have self-closing, self-latching covers located at least 6 inches and not greater than 18 inches below the minimum operating water level, or as an attachment to the skimmer.

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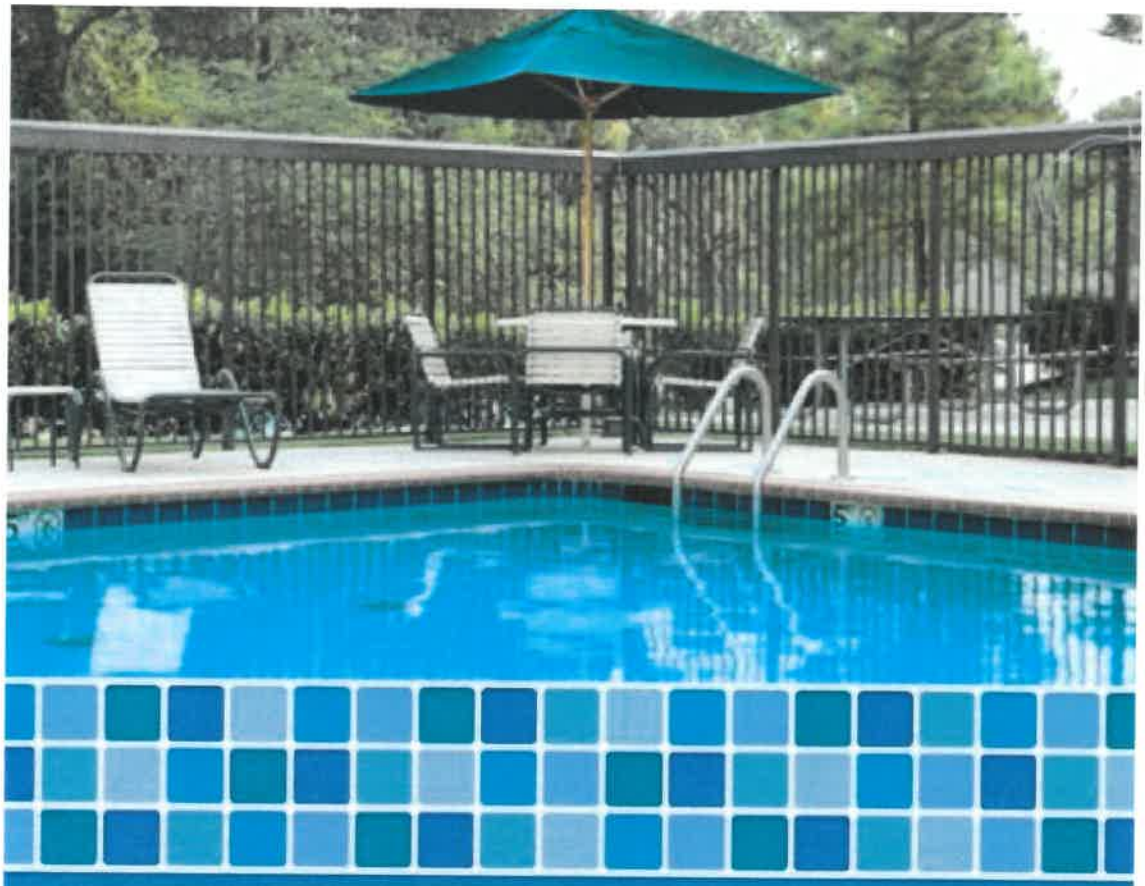
TEMPORARY ABOVE GROUND STORABLE POOLS

DEFINITION

Those pools regulated under the Pennsylvania Uniform Construction Code, as amended, which are above ground, non-permanent pools, inflatable or otherwise, that are constructed to be disassembled and reassembled to their original integrity on a seasonal **(5 months or less)** basis.

LOCATION

1. Pool must be erected and removed completely within the same swimming season, and in no case shall be permitted to exist for more than five (5) months from the date of issuance.
2. Pool must be situate not less than three (3) feet from all side and rear property lines. No pool may be located within a front yard setback.
3. Pool must adhere to all applicable barrier, inspection and safety requirements as established in the Pennsylvania Uniform Construction Code and ISPSC as amended. THIS MEANS, AMONG OTHER THINGS, THAT THE POOL MUST BE IN A FENCED YARD AREA, AND BARRIER MUST MEET ALL REQUIREMENTS OF THE CODE.
4. Permits must be applied for <u>each</u> swimming season <u>prior</u> to the installation of the pool.



Safety Barrier Guidelines for Residential Pools

Preventing Child Drownings

U.S. Consumer Product Safety Commission

A successful pool barrier prevents a child from getting **OVER**, **UNDER**, or **THROUGH** and keeps the child from gaining access to the pool except when supervising adults are present.

How To Prevent a Child from Getting OVER a Pool Barrier

A young child can get over a pool barrier if the barrier is too low or if the barrier has handholds or footholds to use when climbing. The top of a pool barrier should be at least 48 inches above grade, measured on the side of the barrier which faces away from the swimming pool. Some states, counties or municipalities require pool barriers of 60 inches.

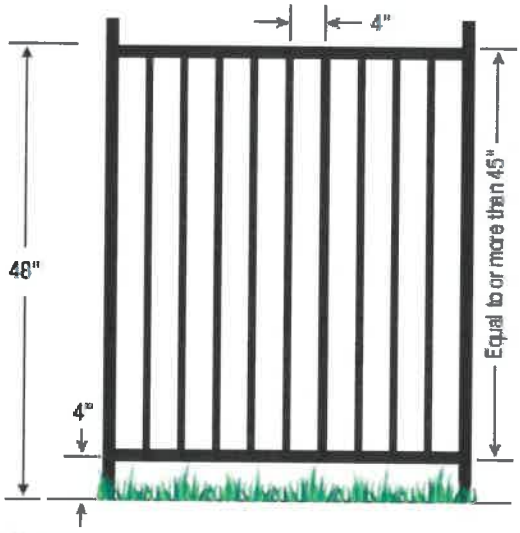


Figure 1

Eliminate handholds and footholds and minimize the size of openings in a barrier's construction.

For a Solid Barrier

No indentations or protrusions should be present, other than normal construction tolerances and masonry joints.

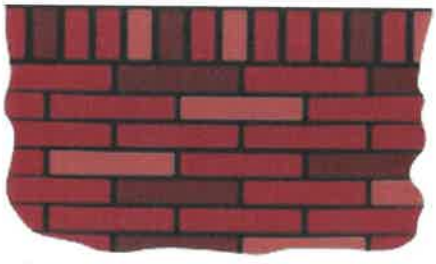


Figure 2

For a Barrier (Fence) Made Up of Horizontal and Vertical Members

If the distance between the top side of the horizontal members is less than 45 inches, the horizontal members should be on the swimming pool side of the fence.

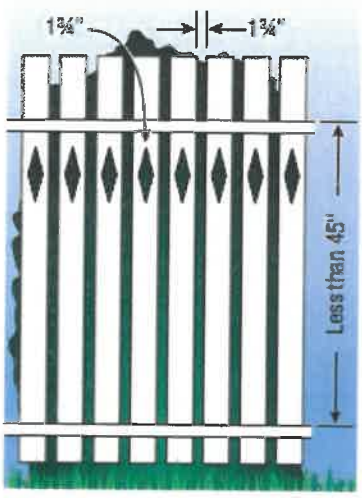


Figure 3

The spacing between vertical members and within decorative cutouts should not exceed 1¾ inches. This size is based on the foot width of a young child and is intended to reduce the potential for a child to gain a foothold and attempt to climb the fence.

If the distance between the tops of the horizontal members is more than 45 inches, the horizontal members can be on the side of the fence facing away from the pool. The spacing between vertical members should not exceed 4 inches. This size is based on the head breadth and chest depth of a young child and is intended to prevent a child from passing through an opening. If there are any decorative cutouts in the fence, the space within the cutouts should not exceed 1¾ inches.

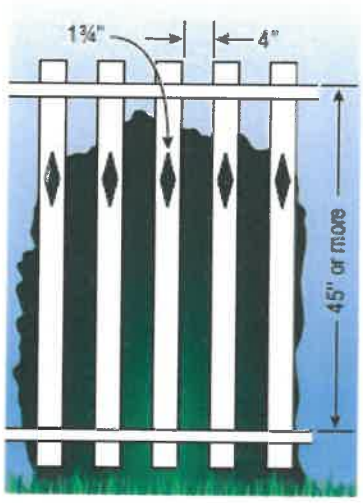


Figure 4

For a Chain Link Fence

The mesh size should not exceed 1¼ inches square unless slats, fastened at the top or bottom of the fence, are used to reduce mesh openings to no more than 1¾ inches.

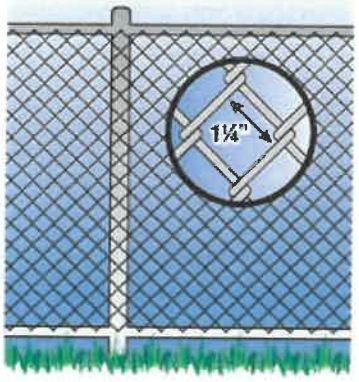


Figure 5

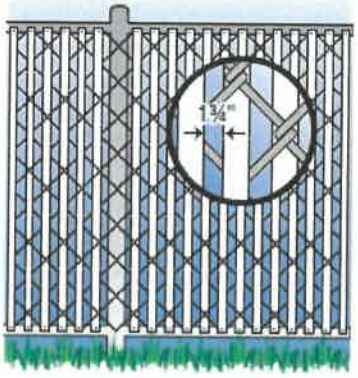


Figure 6

For a Fence Made Up of Diagonal Members or Latticework

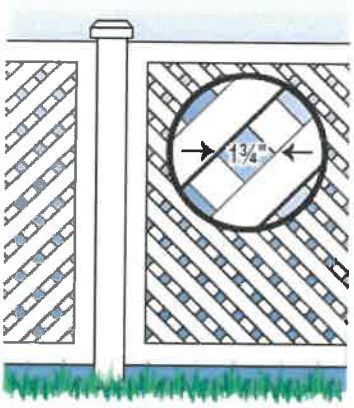


Figure 7

The maximum opening in the lattice should not exceed 1¾ inches.

For Above Ground Pools

Above ground pools should have barriers. The pool structure itself serves as a barrier or a barrier is mounted on top of the pool structure.

There are two possible ways to prevent young children from climbing up into an above ground pool. The steps or ladder can be designed to be secured, locked or removed to prevent access, or the steps or ladder can be surrounded by a barrier such as those described in these guidelines

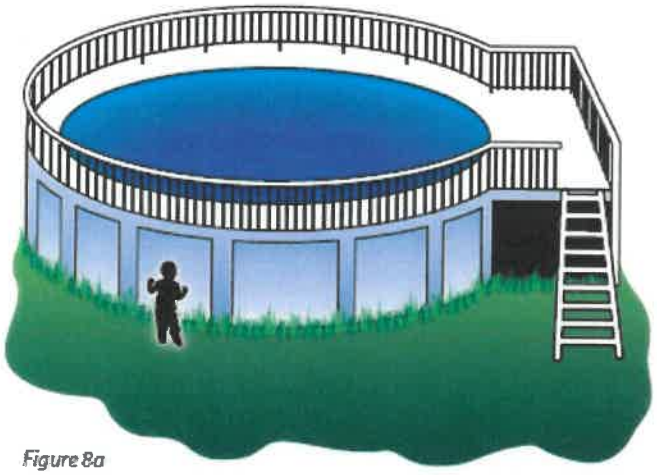


Figure 8a

Figure 8b

Figure 8c

Above Ground Pool with Barrier on Top of Pool

If an above ground pool has a barrier on the top of the pool, the maximum vertical clearance between the top of the pool and the bottom of the barrier should not exceed 4 inches.

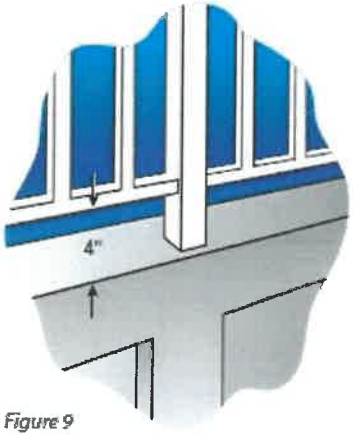


Figure 9

How to Prevent a Child from Getting UNDER a Pool Barrier

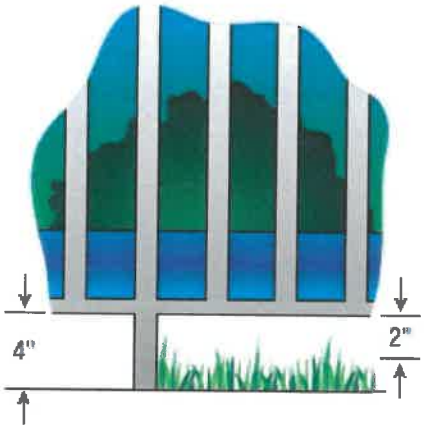


Figure 10

For any pool barrier, the maximum clearance at the bottom of the barrier should not exceed 4 inches above the surface or ground when the measurement is done on the side of the barrier facing away from the pool. Industry recommends that if the bottom of the gate or fence rests on a non-solid surface like grass or gravel, that measurement should not exceed 2 inches.

How to Prevent a Child from Getting THROUGH a Pool Barrier

Preventing a child from getting through a pool barrier can be done by restricting the sizes of openings in a barrier and by using self-closing and self-latching gates.

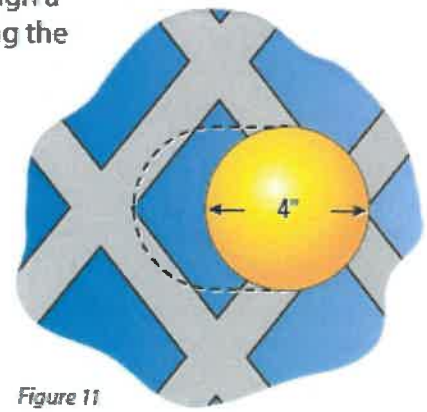


Figure 11

To prevent a young child from getting through a fence or other barrier, all openings should be small enough so that a 4-inch diameter sphere cannot pass through. This size is based on the head breadth and chest depth of a young child.

ELECTRICAL INFORMATION (see attached drawing for additional information)

General: The construction and installation of electrical wiring for equipment in or adjacent to swimming pools, and to all appurtenances thereto shall comply with Chapter 42 of the International Residential Code.

Overhead Conductor Clearances. The following parts of pools and outdoor spas and hot tubs shall **not** be placed under existing service-drop conductors or any other open overhead wiring; nor shall such wiring be installed above the following:

1. Pools and the areas extending 10 feet horizontally from the inside walls of the pool;
2. Diving structures; or
3. Observation stands, towers, and platforms.

Underground Wiring. Underground wiring shall not be installed under or within the area extending five (5) feet horizontally from the inside walls of pools and outdoor hot tubs and spas except where the wiring is installed to supply equipment for same.

Receptacles.

1. **Location.** A single, grounding type receptacle which is protected by ground fault circuit interrupters and run in conduit, is required for the pump motor. This must be at least six (6) feet from the inside walls of the pool. *NO* receptacles shall be located within *six (*6) feet of the inside walls of the pool.
2. **Where Required.** At least one 125 volt 15 or 20 ampere convenience duplex receptacle supplied by a general purpose branch circuit shall be located a minimum of six (6) feet from and not more than 20 feet from the inside walls of the pool. This receptacle shall not be located more than 6 feet, 6 inches above the floor, platform or grade level serving the pool, spa or hot tub. This receptacle must have an in-use cover. Pool pump receptacle shall be mounted on a post, (usually 4" x 4" pressure treated) or other structure.
3. **GFCI Protection.** All receptacles located within 20 feet of the inside walls of the pool, spa or hot tub shall be protected by a ground fault circuit interrupter, protected with an in-use cover.
4. All receptacles installed in wet locations shall have in-use covers and be listed as weather resistant location receptacles.

Pool Pump. Shall have maximum 3 foot cord with a plug factory installed.

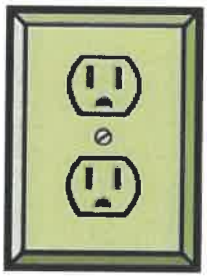
Switching Devices. Switching devices shall be located not less than 5 feet horizontally from the inside walls of pools, except where separated from the pool, spa or hot tub by a solid fence, wall or other permanent barrier.

Disconnecting Means – E 4103.3. An accessible disconnecting means shall be provided and located within sight from all pools, spas, and hot tub equipment, and shall be located not less than 5 feet from the inside walls of the pool, spa or hot tub.

Time Switches – N 1103.8.2. Time switches that can automatically turn heaters and pumps off and on to a pre set schedule shall be installed on swimming pool heaters and pumps.

RECEPTACLE EXAMPLES:

Single Twist Lock Receptacle



Duplex Receptacle

Conduit Burial. Unless an exception applies, all conduit must be buried a minimum of 18 inches, and electrical *rigid* conduit ONLY is permitted (PVC or metal), no EMT (Electrical Metallic Tubing) or Aluminum. Black, white, and green #12 THHN/THWN minimum should be installed inside the conduit.

Certifications. All pool, spa and hot tub equipment must have UL or other national recognized testing laboratory approval. Any pool equipment without such a rating is not permitted, and any pool equipment altered by consumer or contractor will violate the national rating and will NOT be acceptable.

Grounding and Bonding. All equipment shall be properly bonded and grounded as required by this Code and all other applicable codes, including but not limited to Chapter 42 of the International Residential Code:

- Pool motor must be bonded with #8 solid copper wire
- If the ladder is metal, it must also be bonded to the pool
- All metal within 5 feet of the inside wall of the pool shall be bonded to the pool with #8 solid copper.
- Bonding connectors shall be stainless steel, brass, copper or alloy.
- Equipotential plane must be installed, and may be #8 Bare Solid Copper 18"-24" from pool, 4"-6" below grade, and attached to pool in four locations.
- Pool water must be bonded with a minimum conductive surface area of 9 square inches. Bond to #8 solid copper bond system.

REMEMBER!