



PLANNING AND DEVELOPMENT

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SWIMMING POOLS, SPAS AND HOT TUBS

Per International Residential Code 2006 – Appendix G

AG101.1 GENERAL. The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one and two-family dwelling.

AG105.1 APPLICATION. The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas, and hot tubs.

AG105.2 OUTDOOR SWIMMING POOL. An outdoor swimming pool, including an in-ground, aboveground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102mm).
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.
3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.
4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.
5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.
6. Maximum mesh size for chain link fences shall be a 2.25 – inch (57 mm) square unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to not more than 1.75 inches (44mm).
7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1.75 inches (44mm).
8. Access gates shall comply with the requirements of section AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Where the release mechanism of the self-latching device is located less than 54

inches (1372mm) from the bottom of the gate, the release mechanism and openings shall comply with following:

The release mechanism shall be located on the pool side of the gate at least 3 inches (76mm) below the top of the gate, and

The gate and barrier shall have no opening greater than 0.5 inch (12.7mm) within 18 inches (457 mm) of the release mechanism.

9. Where a wall of a dwelling serves as part of the barrier one of the following conditions shall be met:
 - 9.1 The pool shall be equipped with a powered safety cover in compliance with ASTM F 1346 or
 - 9.2 Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017. The audible alarm shall activate within 7 seconds and sound continuously for a minimum of 30 seconds after the door and/or its screen, if present, are opened and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as a touchpad or switch, to temporarily deactivate the alarm for a single opening. Deactivation shall last for not more than 15 seconds. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or
 - 9.3 Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable so long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described above.
10. Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then:
 - 10.1 The ladder or steps shall be capable of being secured, locked or removed to prevent access, or
 - 10.2 The ladder or steps shall be surrounded by a barrier which meets the requirements of Section AG105.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102mm) sphere.

The above-ground pool structure CANNOT be used as a barrier if it has any projections or toe holds that create a laddering effect.

AG105.3 INDOOR SWIMMING POOL: All walls surrounding an indoor private swimming pool shall comply with Section AG105.2, Item 9.

AG105.4 PROHIBITED LOCATIONS: Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers.

AG105.5 BARRIER EXEMPTIONS: Spas or hot tubs with a safety cover which complies with ASTM F1346, as listed in Section AG107, shall be exempt from the provisions of this appendix.

SWIMMING POOL WIRING

1. Use #8 solid copper wire for bonding. Bond all metallic non-current carrying parts of a pool:

- a. Pool reinforcing steel. (an above-ground pool does not have reinforcing rods, so you will need to bond the circulating pump to one metal pool support.)
 - b. Metal conduits
 - c. Lighting fixtures
 - d. Ladders
 - e. Diving Board
 - f. Circulating pump motor
 - g. Metal junction boxes
 - h. Pool Heaters
2. PVC or conduit must be used as a raceway for underwater lights and must terminate in a service panel board or remote panel board. An insulated green wire (not smaller than #12 wire) must be used for the equipment ground-unbroken.
 3. Underwater lights over 15 volts must have ground-fault circuit-interrupter (GFI) protection.
 4. The circulating pump must have GFI protection – 120 volts, only if an outlet is used.
 - a. If an outlet is used to feed the circulating pump: A single outlet must be used and must be of the locking and grounding type. A rain-tight outlet cover (not your standard weatherproof cover) must be used so the outlet will remain weatherproof with the plug inserted.
 - b. If the circulating pump is hardwired: Ground fault protection is not required, but a switch shall be required.
 5. An outside outlet must be installed not less than 10 feet and not more than 20 feet from the edge of the pool. (The 20' rule can vary some). GFI protection is required for this outlet.
 6. Single family dwellings: PVC or conduit must be used from the dwelling to the outlet or switch at the pump. The PVC or conduit must be buried at least 18". Expansion joints must be used at both ends. Romex may be run from the electrical panel to a weatherproof box on the exterior of the dwelling.
 7. Other than storable pools, the flexible cord shall not exceed 3 feet in length and shall have a copper equipment grounding conductor not smaller than #12 wire.
 8. In-ground metal pool: If the pool is of metal construction and suitable welded or bolted together, only one bonding connection needs to be made to the pool from the circulating pump.
 9. Do not use Romex or UF cable in PVC or conduit. Romex may be used inside single-family dwellings only.
 10. Ground rods are not required by code for any pool.
 11. The cord from the pump to the outlet must be a #12/2 AWG wire with a twist lock cord cap and a weatherproof connector for the pump. If not, it is a code violation.
 12. For more information please see the National Electrical Code 2005 Article 680.