



Sample Guidelines & Requirements for Residential Above Ground Swimming Pools (2023)

SWIMMING POOL: Any structure intended for swimming, recreational bathing or wading that contains water over 24 inches deep. This includes in-ground, above-ground and on-ground pools; hot tubs; spas and fixed-in-place wading pools. (2021 International Building Code, New Jersey Edition)

1. Zoning and building department permits are required, along with County Health Department approval for the installation of a permanently installed residential above ground swimming pools. This shall include technical sheets filled out for electrical and building subcodes.
2. **Electrical installations for swimming pools, spas and hot tubs shall comply with the provisions of Parts I, II & IV of Article 680 of the 2020 edition of The National Electrical Code (NFPA70).**
3. Electrical equipment shall be grounded in accordance with Parts V, VI and VII of Article 250 and connected by wiring methods approved in Chapter 3 (except as modified by Article 680). All items listed in Article 680.6 shall be grounded.
4. The pool pump must be separately fed on an individual branch circuit. (210.23)(A)(2)
5. Underground wiring shall be permitted to be installed in RMC, IMC, PVC, RTRC or type MC cable, suitable for the conditions subject to that location (680.11). Minimum cover depths shall comply with (Table 300.5).
6. Flexible cords feeding pool equipment motors shall be no more than 3' in length (680.21)(A)(3).
7. A means to disconnect all ungrounded conductors shall be provided, located at least 5' from the inside walls of the pool. (680.13).
8. A minimum #12 AWG conductor shall be used for all pool associated wiring. (680.8)(B)
9. At least one 125-volt, 15- or 20-ampere WR rated GFCI receptacle on a general-purpose branch circuit shall be located at least 6', but not more than 20' from the inside wall of the pool or spa. It shall not be more than 6'6" above the grade that the pool or spa. (680.22)(A)(1)
10. Equipotential bonding as specified in Article 680.26(B)(2) shall be installed to reduce voltage gradients in the area of the spa or tub, except where all of the conditions of 680.42(B) are met. It shall consist of a #8 solid bare copper conductor surrounding the pool between 18"-24" from the inside walls and buried 4"-6" below the sub-grade. It shall be attached at 4 uniformly spaced points around the pool utilizing fittings approved for such use.
11. All metal parts of electrical equipment associated with the pool and all metal surfaces located within 5' of the interior walls of the pool or spa shall be bonded using an approved method and a conductor not smaller than #8 AWG. (ladders, pool seam, fences, lighting, etc.) (680.26)

12. The pool water shall be in direct contact with an approved corrosion-resistant conductive surface not smaller than 9 sq. in. tied to the bonding system. (680.26)(C)
13. All pool heaters and pump motors shall be equipped with a time switch or other similar control method (International Energy Conservation Code art. R403.10.2)
14. All equipment and products must be listed.
15. The design and construction of swimming pools, spas and hot tubs and their enclosures shall comply with the International Swimming Pool and Spa Code, 2018 Edition & Section R326 of the 2018 International Residential Code, New Jersey Edition.

WHEN IT IS THE SOLE BARRIER TO POOL ACCESS, POOL LADDERS SHALL MEET THE BARRIER REQUIREMENTS LISTED BELOW.

International Swimming Pool & Spa Code- Barrier Requirements (Section 305)

305.1 General. The provisions of this section shall apply to the design of barriers for restricting entry into areas having pools or spas. Where spas or hot tubs are equipped with a lockable safety and swimming pools are equipped with a powered safety cover that complies with ASTM F1346, the areas where those spas, hot tubs or pools are located shall not be required to comply with Sections 305.2 through 305.7.

305.2 Outdoor swimming pools and spas. Outdoor pools and spas and indoor pools shall be surrounded by a barrier that complies with Sections 305.2.1 through 305.7.

305.2.1 Barrier height & clearances. Barrier heights and clearances shall be in accordance with all of the following:

1. The top of the barrier shall not be less than 48 inches above grade where measured on the side of the barrier that faces away from the pool or spa. Such height shall exist around the entire perimeter of the barrier and for a distance of 3' measured horizontally from the outside of the required barrier.
2. The vertical clearance between grade and the bottom of the barrier shall not exceed 2" for grade surfaces that are not solid, such as grass or gravel, where measured on the side of the barrier that faces away from the pool or spa.
3. The vertical clearance between a surface below the barrier to a solid surface, such as concrete, and the bottom of the required barrier shall not exceed 4" where measured on the side of the required barrier that faces away from the pool or spa.
4. Where the top of the pool or spa structure is above grade, the barrier shall be mounted on top of the pool or spa structure. Where the barrier is mounted on top of the pool or spa, the vertical clearance between the top of the pool or spa and the bottom of the barrier shall not exceed 4".

305.2.2 Openings. Openings in the barrier shall not allow passage of a 4" diameter sphere.

305.2.3 Solid barrier surfaces. Solid barriers that do not have openings shall not contain indentions or protrusions that form handholds and footholds, except for normal construction tolerances and tooled masonry joints.

305.2.4 Mesh fence as a barrier. Mesh fences, other than chain link fences in accordance with Section 305.2.7, shall be installed in accordance with the manufacturer's instructions and shall comply with the following:

1. The bottom of the mesh fence shall not be more than 1" above the deck or installed surface or grade.
2. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not permit the fence to be lifted more than 4" from grade or decking.
3. The fence shall be designed and constructed so that it does allow passage of a 4" sphere under any mesh panel. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not be greater than 4" from grade or decking.
4. An attachment device shall attach each barrier section at a height not lower than 45" above grade. Common attachment devices include, but are not limited to, devices that provide the security equal to or greater than that of a hook-and-eye type latch incorporating a spring-actuated retaining lever such as a safety gate hook.
5. Where a hinged gate is used with a mesh fence, the gate shall comply with Section 305.3.
6. Patio deck sleeves such as vertical post receptacles that are placed inside the patio surface shall be of a non-conductive material.
7. Mesh fences shall not be installed on top of onground residential pools.

305.2.5 Closely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45", the horizontal members shall be located on the pool or spa side of the fence. Spacing between vertical members shall not exceed 1-3/4" in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1-3/4" in width.

305.2.6 Widely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45" or more, spacing between vertical members shall not exceed 4". Where there are decorative cutouts within vertical members, the interior width of the cutouts shall not exceed 1-3/4" in width.

305.2.7 Chain link dimensions. The maximum opening formed by a chain link fence shall not be more than 1-3/4". Where the fence is provided with slats fastened at the top and bottom that reduce the openings, such openings shall not be greater than 1-3/4"

305.2.8 Diagonal members. Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall not be greater than 1-3/4". The angle of diagonal members shall not be greater than 45 degrees from vertical.

305.2.9 Clear zone. There shall be a clear zone of not less than 36 inches between the exterior of the barrier and any permanent structures or equipment such as pumps, filters and heaters that can be used to climb the barrier.

305.2.10 Poolside barrier setbacks. The pool or spa side of the required barrier shall be not less than 20" from the water's edge.

305.3 Gates. Access gates shall comply with the requirements of Sections 305.3.1 through 305.3.3 and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool or spa, shall be self-closing and shall have a self-latching device.

305.3.1 Utility or service gates. Gates not intended for pedestrian use, such as utility or service gates, shall remain locked when not in use.

305.3.2 Double or multiple gates. Double gates or multiple gates shall have not fewer than one leaf secured in place and the adjacent leaf secured with a self-latching device. The gate and barrier shall not have openings larger than 1/2" within 18" of the latch release mechanism. The self-latching device shall comply with the requirements of Section 305.3.3.

305.3.3 Latches. Where the release mechanism of the self-latching device is located less than 54" from grade, the release mechanism shall be located on the pool or spa side of the gate not less than 3" below the top of the gate, and the gate and the barrier shall not have openings greater than 1/2" within 18" of the release mechanism.

305.5 Onground residential pool structure as a barrier. An onground residential pool wall structure or a barrier mounted on top of an onground residential pool wall structure shall serve as a barrier where all of the following conditions are present:

1. Where only the pool wall serves as the barrier, the bottom of the wall is on grade, the top of the wall is not less than 48" above grade for the entire perimeter of the pool, the wall complies with the requirements of Section 305.2 and the pool manufacturer allows the walls to serve as a barrier.

2. Where a barrier is mounted on top of the pool wall, the top of the barrier is not less than 48" above grade for the entire perimeter of the pool, and the wall and the barrier on top of the wall comply with the requirements of Section 305.5.

3. Ladders or steps used as means of access to the pool are surrounded by a barrier that meets the requirements of Section 305.

4. Openings created by the securing, locking or removal of ladders and steps do not allow the passage of a 4" diameter sphere.

5. Barriers that are mounted on top of onground residential pool walls are installed in accordance with the pool manufacturer's instructions.

305.6 Natural barriers. In the case where the pool or spa area abuts the edge of a lake or other natural body of water, public access is not permitted or allowed along the shoreline, and required barriers extend to and beyond the water's edge not less than 18", a barrier is not required between the natural body of water shoreline and the pool or spa.

305.7 Natural topography. Natural topography that prevents direct access to the pool or spa area shall include but not limited to mountains and natural rock formations. A natural barrier approved by the governing body shall be acceptable provided that the degree of protection is not less than the protection afforded by the requirements of 305.2 through 305.5.

International Plumbing Code: The nearest hose bib to the pool or spa shall contain an anti-siphon device.