



Swimming Pools, Spas and Hot Tub Barrier (Fence) Requirements

“Drowning is the second leading cause of accidental death in the home for children under five years of age. The use of effective residential swimming pool barriers is the best way to reduce these tragic losses.” (2009 IRC Commentary)

The purpose of this writing is to provide some guidance to ensure pool barriers are correctly installed. As stated above unsupervised children less than five years of age within the home are at the greatest risk of accidental death by drowning. Therefore, the barrier standards herein are for the purpose of **reducing** that risk. Careful attention to the standards is important.

Swimming pool as defined by the code is any structure intended for swimming or recreational bathing that contains water over 24” deep. This includes in-ground, above-ground and on-ground swimming pools, hot tubs and spas. **Outdoor** swimming pools shall be surrounded by a barrier that complies with Section AV105.2 of the 2018 NC Residential Code. There are ten specific requirements that provide for the differing conditions you chose for a barrier. The conditions listed in the 2018 NC Residential Code are as follows:

1. The top of the barrier shall be at least 48 inches 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 measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an above-ground pool, the barrier may be at ground level, such as 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.

2. Openings in the barrier shall not allow passage of a 4-inch-diameter 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, the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed $1\frac{3}{4}$ inches in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed $1\frac{3}{4}$ inches 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 or more, spacing between vertical members shall not exceed 4 inches. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed $1\frac{3}{4}$ inches in width.
6. Maximum mesh size for chain link fences shall be a $2\frac{1}{4}$ inch square unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than $1\frac{3}{4}$ inches.
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 $1\frac{3}{4}$ inches.
8. Access gates shall comply with the requirements of Section AV105.2, 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. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches from the bottom of the gate, the release mechanism and openings shall comply with the following:
 - 8.1. The release mechanism shall be located on the pool side of the gate at least 3 inches below the top of the gate; and
 - 8.2. The gate and barrier shall have no opening larger than $\frac{1}{2}$ inch within 18 inches 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 and *labeled* in accordance with UL 2017. The deactivation switch (es) shall be located at least 54 inches 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 as 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 above-ground 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:

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 AV105.2, 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 (102 mm) sphere.

Another condition when installing the barrier, it shall be located to prohibit the use of permanent structures from being used to climb from them onto or over the fence. If you have any further questions, please call the City of Monroe Permit Center at 704-282-4524. This paper and Appendix V of the 2018 NC Residential Code can also be viewed on the Building Standards Website under residential pools.

Signature

Date