



# Residential Pools, Spas, and Hot Tubs Barrier and Safety Requirements



Version 2019\_1028

- 1- Fencing /Barrier
- 2- Automatic Power Safety Cover
- 3- Safety cover for Hot Tubs
- 4- Door Exit Alarm
- 5- Window Alarms
- 6- Fence Gate Close & Latch
- 7- Self-Closing/Self Latching Devices for Doors and Latching Devices.
- 8- Infrared Detectors (optional)
- 9- Pool Water level
- 10- Slip Resistant Walking Surface
- 11- Rope & Float Line
- 12- Life Ring, Shepard's Hook (optional)
- 13- Posted Emergency Information. (optional)
- 14- Outside Telephone. (optional)
- 15- Anti-Entrapment Drain Covers and Fittings.

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## GENERAL

The provisions of this document shall control the design, construction, and installation of barriers, safety devices and equipment for swimming pools, spas and hot tubs installed in or on the lot of a one or two family dwelling.

## DEFINITIONS

For the purpose of these requirements, the terms used shall be defined as follows and as set forth in the Virginia Residential Code, and the International Swimming Pool and Spa Code. Please refer to the [Virginia Uniform Statewide Building Code](#), (VUSBC) webpage and the International Swimming Pool and Spa Code, (ISPSC) for more information on the codes and code year which are applicable to your project.

## PERMITS

All pools with a surface area greater than 150 square feet, hold more than 5,000 gallons, or are deeper than 24", will require a [Building Permit](#).

All pools that incorporate lighting, circulation equipment, or receptacle outlets will require an [Electrical Permit](#).

All pools with "field installed" heaters will require a [Mechanical Permit](#).

All "fuel fired" pool heaters will require a [Gas Permit](#).

All pools with a permanent fill line or connection to sanitary sewer will requires a [Plumbing Permit](#).

## Applications

These design controls are intended to provide protection against potential drowning and near drowning by restricting access to swimming pools, spas and hot tubs.

## BARRIER REQUIREMENTS



All pools, spas, and hot tubs must be provided with a code compliant barrier per the ISPSC.

**Exception:** A powered safety cover that complies with ASTM F 1346 may serve as the barrier for pools. A lockable safety cover that complies with ASTM F1346 may serve as the barrier for hot tubs.



## HEIGHT AND CLEARANCES

1. The top of the barrier shall be at least 48" 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 for grade surfaces such as grass, mulch, and gravel, and 4" for solid surfaces such as concrete, **See Figure 3**. 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. **See Figure 2**.
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. **See Figure 1**.

OUTSIDE SHALL CONTAIN NO INDENTATIONS OR PROTRUSIONS EXCEPT FOR NORMAL CONSTRUCTION TOLERANCES AND TOOLED MASONRY JOINTS.

EQUIPMENT, INCLUDING POOL EQUIPMENT SUCH AS PUMPS, FILTERS AND HEATERS SHALL NOT BE INSTALLED WITHIN 36 INCHES OF THE EXTERIOR OF THE BARRIER WHEN LOCATED ON THE SAME PROPERTY

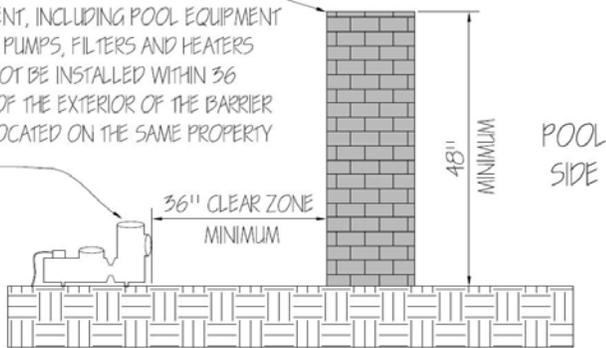


Figure 1

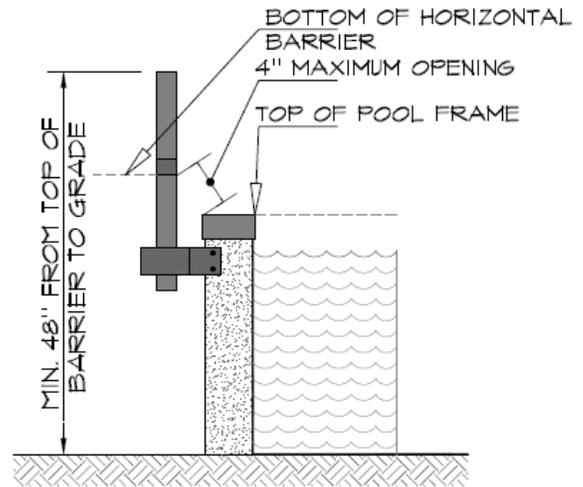


Figure 2

## HORIZONTAL AND VERTICAL MEMBERS

1. 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.

See Figure 3.

2. 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. See Figure 4.



$1\frac{3}{4}$ " CLEARANCE BETWEEN VERTICAL MEMBERS

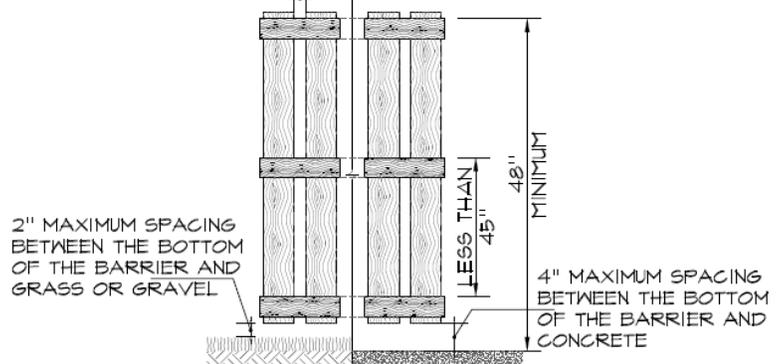
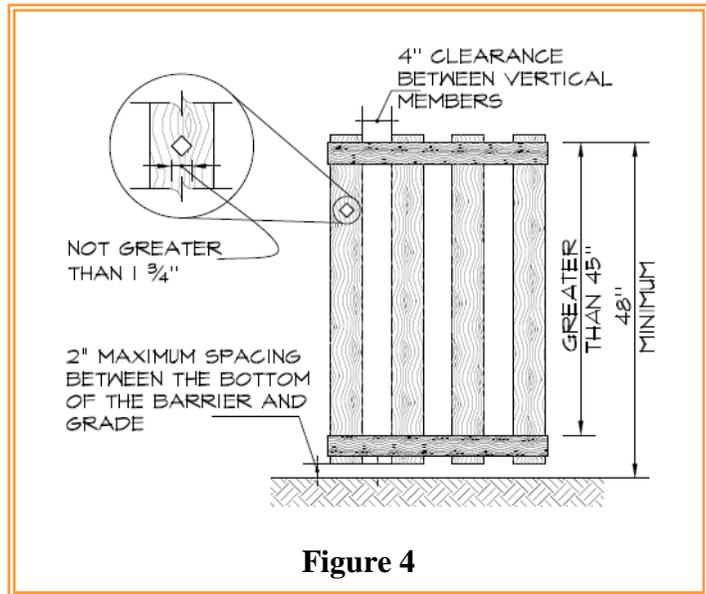
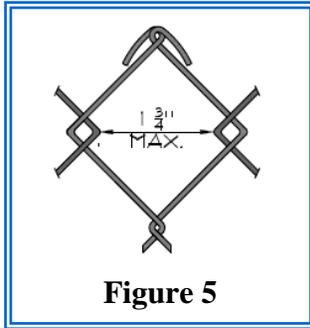


Figure 3

## CHAIN LINK

Maximum mesh size for chain link fences shall be a 1¾ inch measured along the horizontal axis.

See Figure 5.



## LATTICE

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 1¾ inches. See Figure 6.

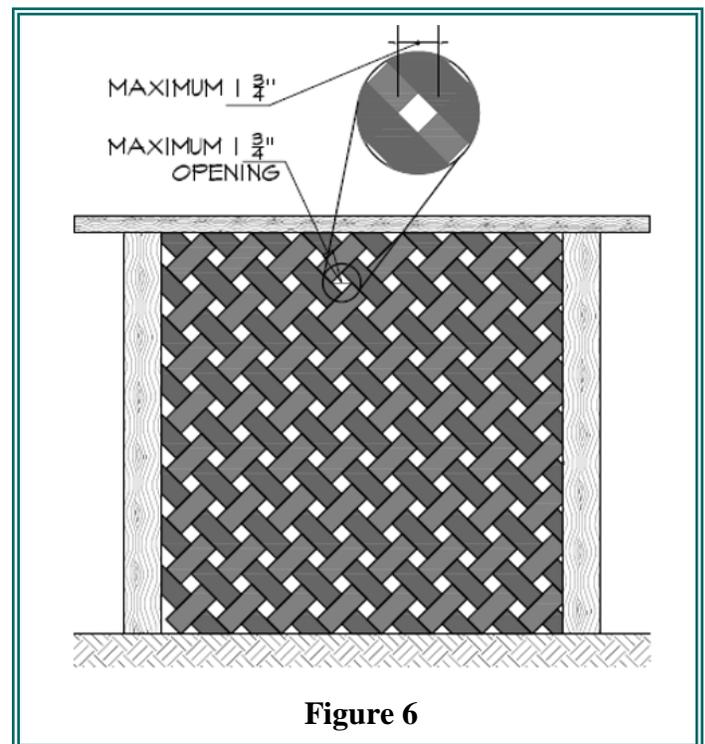
### MESH RESTRAINING BARRIER

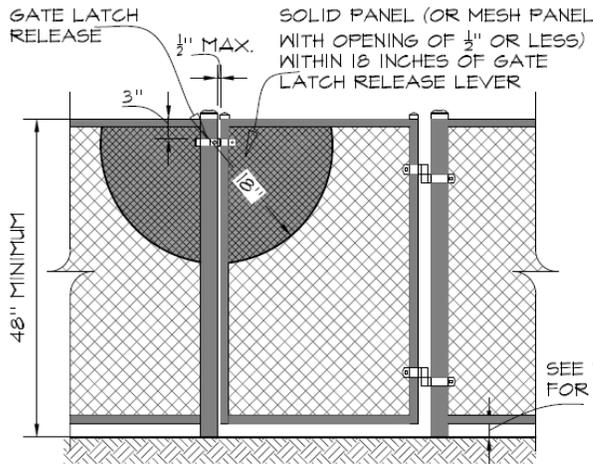
Mesh fences listed and installed per the manufacturers installation instructions, and in accordance with their listing and the ISPSC are permitted as barriers.

### ACCESS GATES AND LATCHES

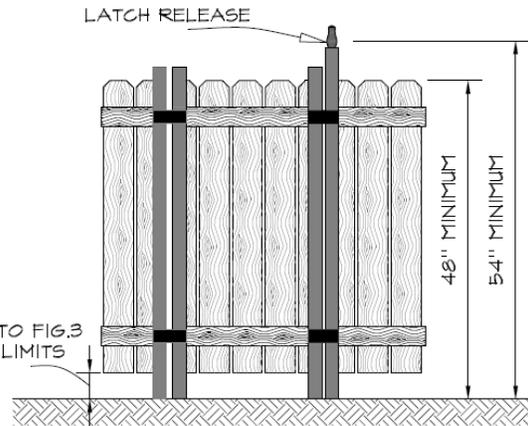
Access gates shall comply with barrier requirements and shall be equipped to accommodate a locking device. *Pedestrian* access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. *Utility and service* gates shall be locked when not in use. Where the release mechanism of the self-latching device is located less than 54 inches from grade, the release mechanism and openings shall comply with the following:

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
2. The gate and barrier shall have no opening larger than ½ inch within 18 inches of the release mechanism. See Figures 7a &b.





**Figure 7a**



**Figure 7b**

### WALL OF DWELLING AS BARRIER

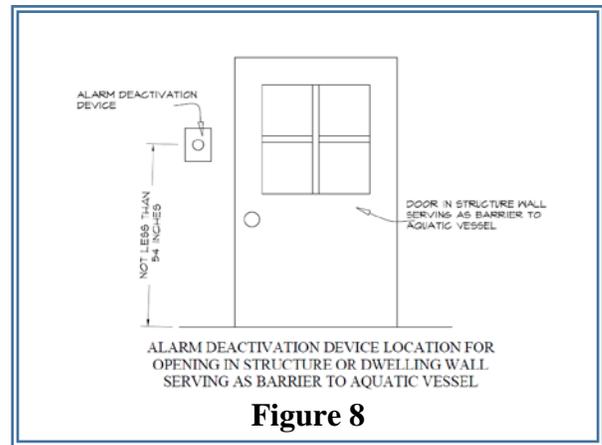
Where a wall of a dwelling serves as part of the barrier, one of the following conditions shall be met:

1. The pool shall be equipped with a powered safety cover in compliance with ASTM F1346; **or**

2. Doors, and operable windows with sill height of less than 48", with direct access to the pool, shall be equipped with an alarm in accordance with UL 2017. The deactivation switch(es) shall be located at least 54 inches above the threshold of the door. **See Figure 8**

In lieu of alarming the windows, a window opening control device complying with ASTM F2090 will be an acceptable alternative.

**See Figure 9.**



**Figure 8**

3. An approved means such as a self-closing, self-latching device provided the level of protection is equal to or greater than items 1. and 2. above.

### POOL STRUCTURE AS BARRIER

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:

1. The ladder or steps shall be capable of being secured, locked, or removed to prevent access; or
2. The ladder or steps shall be surrounded by a code compliant barrier. When the ladder or step are secured, locked, or removed, any opening created shall not allow the passage of a 4-inch diameter sphere.



**Figure 9**

## PROHIBITED LOCATIONS

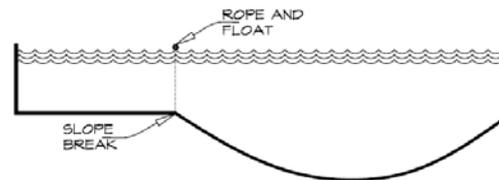
1. **EQUIPMENT CLEAR ZONE.** Equipment, including pool equipment such as pumps, filters and heaters shall not be installed within 36” of the exterior of the barrier when located on the same property. **SEE FIGURE 1**
2. **POOLSIDE SETBACK.** The pool side of the required barrier shall be not less than 20 inches from the water’s edge.

## REQUIRED SAFETY GLAZING

Glazing (glass) in walls and fences enclosing or facing indoor and outdoor swimming pools, hot tubs, and spas where the bottom edge of the glazing is less than 60 inches (1524 mm) above a standing or walking surface and within 60 inches (1524 mm) horizontally of the water’s edge. This shall apply to single and all panes in multiple glazing.

## SAFETY AND WALKING SURFACES

- All decks/**walking surfaces** surrounding pools must be *slip resistant*, and constructed in accordance with the ISPSC.
- **LADDERS, STAIRS, DECKS AND HANDHOLDS** for above ground pools must be installed per the manufacturer’s installation instructions, and the ISPSC.
- All pools exceeding 42” in depth must be provided with “**handholds**” per the ISPSC
- All **DRAIN COVERS** must be listed, labeled and dated per **APSP7** for *suction entrapment avoidance*  
Exception: Portable spas, exercise spas and hot tubs listed and labeled in accordance with **UL 1563**
- All **CIRCULATION PIPING** and fittings must be installed to provide *suction entrapment avoidance*.
- A **ROPE AND FLOAT** must be installed at the 1<sup>st</sup> slope break.



Please refer to the “[Residential Pool, Spa, or Hot Tub](#)” webpage for more information on the permitting and approval process.