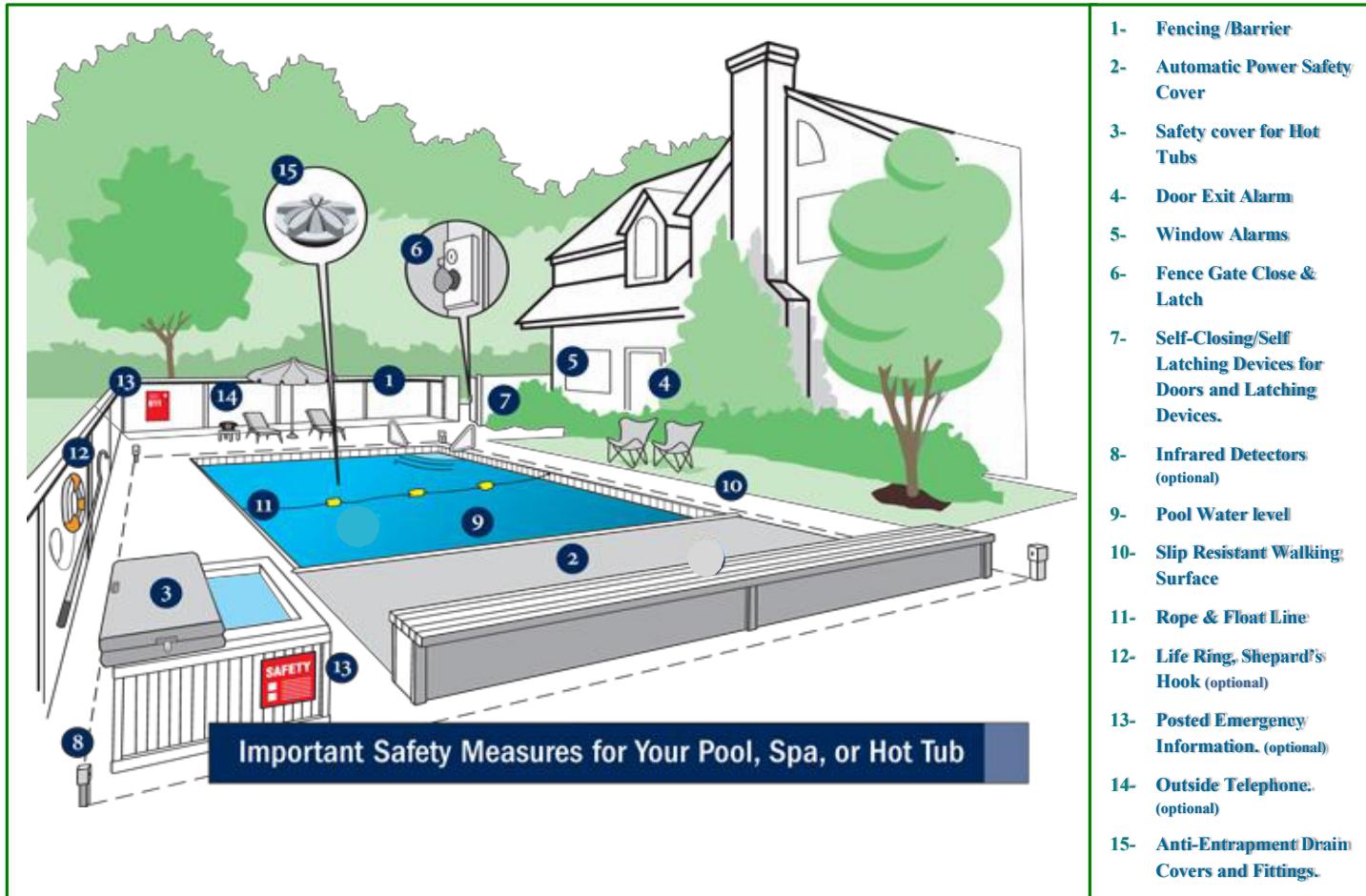




## Barrier and Safety Requirements Residential Pools, Spas, and Hot Tubs



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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 require a Plumbing Permit.

## Applications

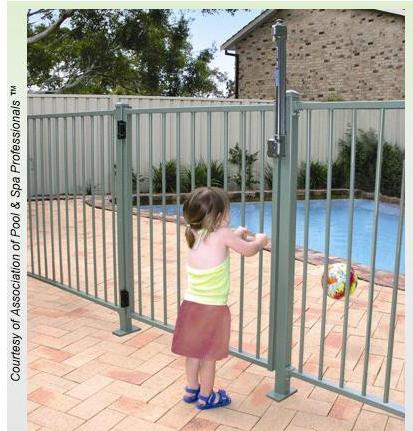
These design controls are intended to provide protection against potential drowning and near drowning by restricting access to swimming pools, spas and hot tubs.



## 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

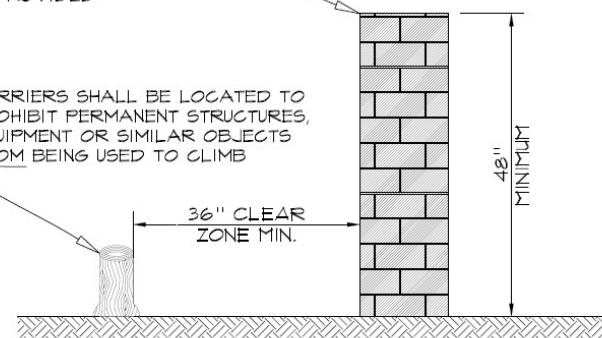
1. The top of the barrier shall be at least 48" above grade, measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches for grade surfaces such as grass, mulch, and gravel, and 4" for solid 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. ALL BARRIERS MUST BE INSTALLED AT LEAST 36" FROM PROPERTY LINES UNLESS LEGAL RECORDED EASEMENT IS PROVIDED

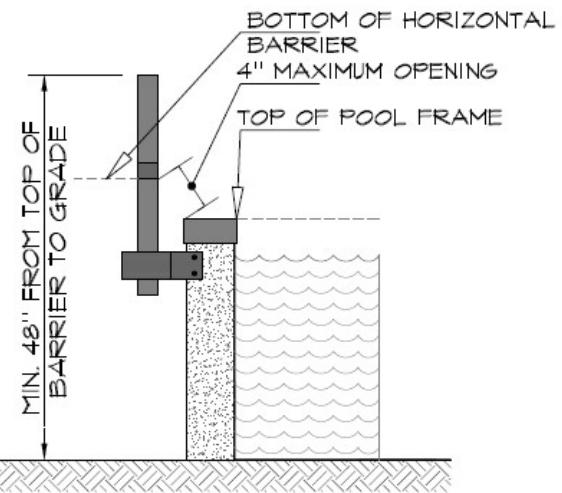
BARRIERS SHALL BE LOCATED TO PROHIBIT PERMANENT STRUCTURES, EQUIPMENT OR SIMILAR OBJECTS FROM BEING USED TO CLIMB

36" CLEAR ZONE MIN.

MINIMUM  
48"



**Figure 1**



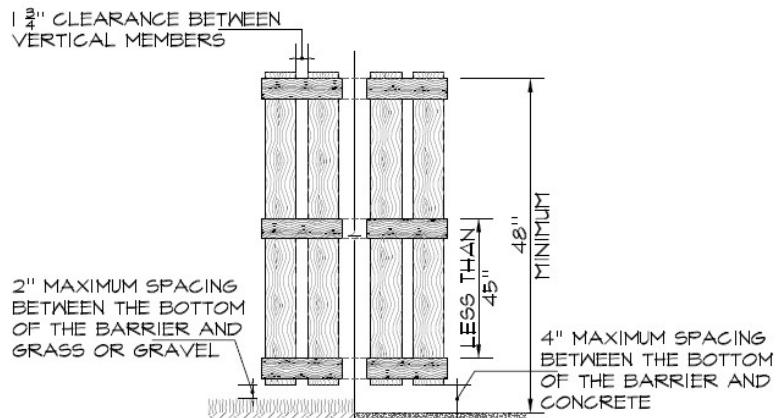
**Figure 2**

## HORIZONTAL AND VERTICAL 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* 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**.

- 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**.



**Figure 3**

## CHAIN LINK

Maximum mesh size for chain link fences shall be a  $1\frac{3}{4}$  inch measured along the horizontal axis.

See Figure 5.

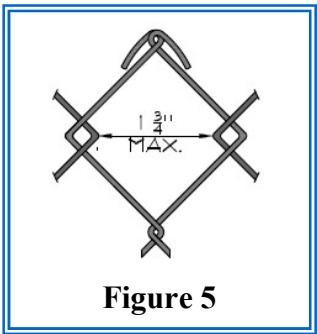


Figure 5

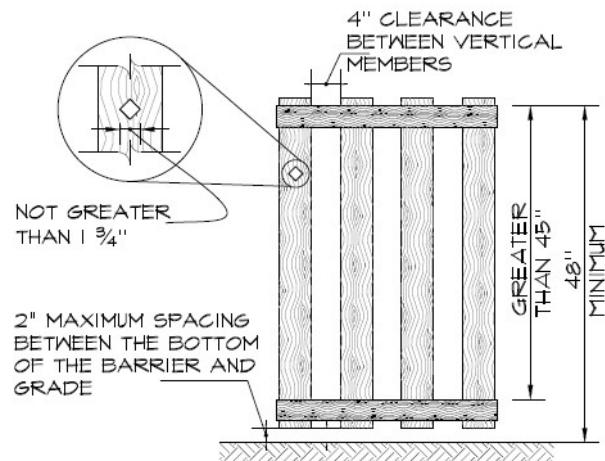


Figure 4

## 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  $1\frac{3}{4}$  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 "temporary" 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  $\frac{1}{2}$  inch within 18 inches of the release mechanism. See Figures 7a & b.



Courtesy of Association of Pool & Spa Professionals™

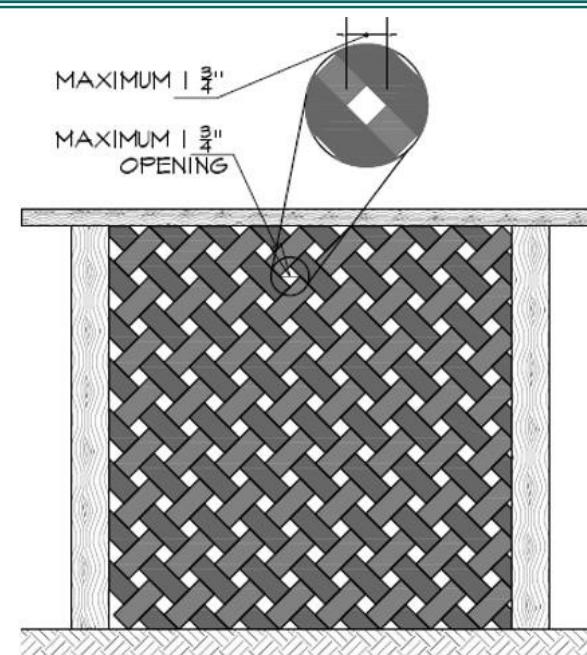


Figure 6

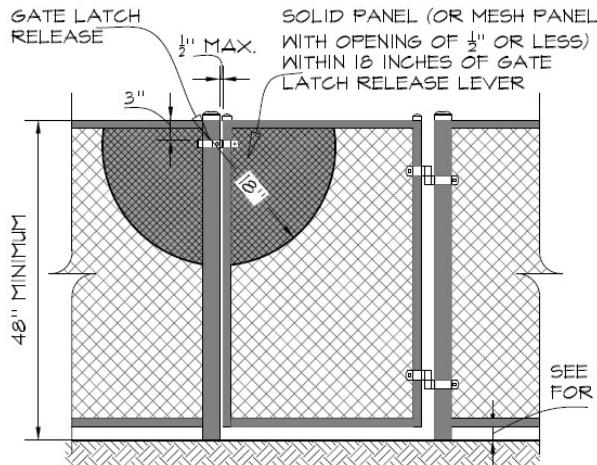


Figure 7a

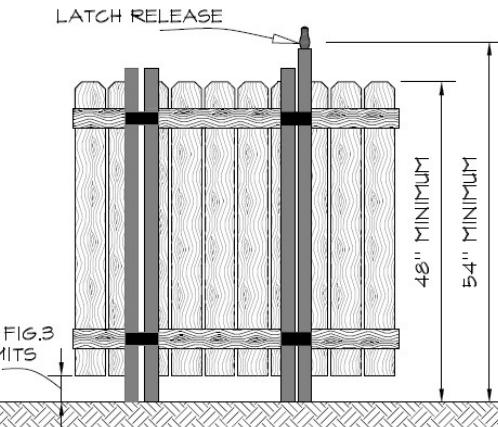


Figure 7b

#### 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**
- a. **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**

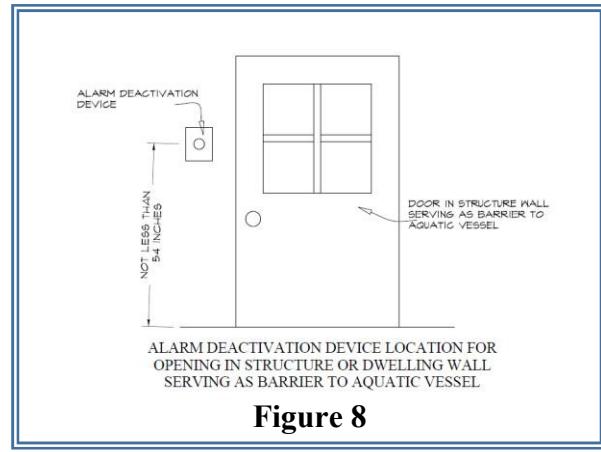


Figure 8

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 ball.

## PROHIBITED LOCATIONS

1. **CLEAR ZONE** There shall be a clear zone of not less than 36 inches (914 mm) around the exterior of the barrier and around any permanent structures or equipment such as pumps, filters and heaters that can be used to climb the barrier. Barriers must be installed at least 36 inches from property line unless legal recorded easement is provided. **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

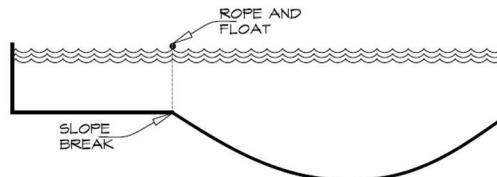
Glazing (glass) in walls and fences enclosing indoor and outdoor swimming pools, hot tubs, and spas where the bottom edge of the glazing is less than 60 inches (1524 mm) above a standing or walking surface and within 60 inches (1524 mm) horizontally of the water's edge. This shall apply to single and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



A special thanks to Prince William County for their preparation of this guideline.



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