

Section 305 of the 2018 International Swimming Pool and Spa Code is added as follows:

SECTION 305

BARRIER REQUIREMENTS

305.1 General. The provisions of this section shall apply to the design of barriers for pools and spas. These design controls are intended to provide protection against the potential drowning and near drowning by restricting access to such pools or spas. These requirements provide an integrated level of protection against potential drowning through the use of physical barriers and warning devices.

Exceptions:

1. Spas and hot tubs with a lockable *safety cover* that complies with ASTM F 1346.
2. Swimming pools with a powered *safety cover* that complies with ASTM F 1346.

R327.1.1 ~~305.1.1~~ Construction fencing required. The construction sites for in-ground swimming pools and spas shall be provided with construction fencing to surround the site from the time that any excavation occurs up to the time that the permanent barrier is completed. The fencing shall be not less than 4 feet (1219 mm) in height.

R327.2 ~~305.2~~ Outdoor swimming pools and spas. Outdoor pools and spas and indoor swimming pools shall be surrounded by a barrier that complies with Sections R327.2.1 ~~305.2.1~~ through R327.7 ~~305.7~~.

R327.2.1 ~~305.2.1~~ Barrier height and clearances. Barrier heights and clearances shall be in accordance with all of the following:

1. The top of the barrier shall be not less than 48 inches (1219 mm) 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 feet (914 mm) 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 inches (51 mm) 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 inches (102 mm) 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 installed on grade or shall be mounted on top of the pool or spa structure. Where the barrier is mounted on the 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 inches (102 mm).

R327.2.2 ~~305.2.2~~ Openings. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

R327.2.3 ~~305.2.3~~ Solid barrier surfaces. Solid barriers that do not have openings shall not contain indentations or protrusions that form handholds and footholds, except for normal construction tolerances and tooled masonry joints.

R327.2.4 ~~305.2.4~~ Mesh fence as a barrier. Mesh fences, other than chain link fences in accordance with Section **R327.2.7 ~~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 be not more than 1 inch (25 mm) 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 inches (102 mm) from grade or decking.
3. The fence shall be designed and constructed so that it does not allow passage of a 4-inch (102mm) sphere under any mesh panel. The maximum vertical clearance from the bottom of the mesh fence and the solid surface shall not be more than 4 inches (102 mm) from grade or decking.
4. An attachment device shall attach each barrier section at a height not lower than 45 inches (1143 mm) 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 nonconductive material.
7. Mesh fences shall not be installed on top of on-ground *residential* pools.

R327.2.4.1 ~~305.2.4.1~~ Setback for mesh fences. The inside of a mesh fence shall be not closer than 20 inches (508 mm) to the nearest edge of the water of a pool or spa.

R327.2.5 ~~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 inches (1143 mm), the horizontal members shall be located on the pool or spa side of the fence. Spacing between vertical members shall not exceed 1¾ inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1¾ inches (44 mm) in width.

R327.2.6 ~~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 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, the interior width of the cutouts shall not exceed 1¾ inches (44 mm).

R327.2.7 ~~305.2.7~~ Chain link dimensions. The maximum opening formed by a chain link fence shall be not more than 1¾ inches (44 mm). Where the fence is provided with slats fastened at the top and bottom which reduce the openings, such openings shall be not more than 1¾ inches (44 mm).

R327.2.8 ~~305.2.8~~ Diagonal members. Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be not more than 1¾ inches (44 mm). The angle of diagonal members shall be not greater than 45 degrees (0.79 rad) from vertical.

R327.2.9 ~~305.2.9~~ Clear zone. Where equipment, including pool equipment such as pumps, filters and heaters, is on the same lot as a pool or spa and such equipment is located outside of the barrier protecting the pool or spa, such equipment shall be located not less than 36 inches (914 mm) from the outside of the barrier. ~~There shall be a clear zone of not less than 36 inches (914 mm) between the exterior of the barrier and any permanent structures or equipment such as pumps, filters and heaters than 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 inches (508 mm) from the water's edge.

R327.3 305.3 Doors and gates **Gates.** Access gates Doors and gates in barriers shall comply with the requirements of Sections R327.3.1 305.3.1 through R327.3.3 305.3.3 and shall be equipped to accommodate a locking device. Pedestrian access doors and gates shall open outward away from the pool or spa, shall be self-closing and shall have a self-latching device.

R327.3.1 305.3.1 Utility or service doors and gates. Doors and gates not intended for pedestrian use, such as utility or service doors and gates, shall remain locked when not in use.

R327.3.2 305.3.2 Double or multiple doors and gates. Double doors and gates or multiple doors and gates shall have not fewer than at least one leaf secured in place and the adjacent leaf shall be secured with a self-latching device. The gate and barrier shall not have openings larger than 1/2 inch (12.7 mm) within 18 inches (457 mm) 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 inches (1372 mm) from grade, the release mechanism shall be located on the pool or spa side of the gate not less than 3 inches (76 mm) below the top of the gate, and the gate and barrier shall not have openings greater than 1/2 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

R327.3.3 305.3.3 Latch release. For doors and gates in barriers, the door and gate latch release mechanisms shall be in accordance with the following:

1. Where door and gate latch release mechanisms are accessed from the outside of the barrier and are not of the self-locking type, such mechanism shall be located above the finished floor or ground surface in accordance with the following:

1.1. At public pools and spas, not less than 52 inches (1219 mm) and not greater than 54 inches (1372 mm).

1.2. At residential pools and spas, not less 54 inches (1372 mm).

2. Where door and gate latch release mechanisms are of the self-locking type such as where the lock is operated by means of a key, an electronic opener or the entry of a combination into an integral combination lock, the lock operation control and the latch release mechanism shall be located above the finished floor or ground surface in accordance with the following:

2.1. At public pools and spas, not less than 34 inches and not greater than 48 inches (1219 mm).

2.2. At residential pools and spas, at not greater than 54 inches (1372 mm).

3. At private pools, where the only latch release mechanism of a self-latching device for a gate is located on the pool and spa side of the barrier, the release mechanism shall be located at a point that is at least 3 inches (76 mm) below the top of the gate.

R327.3.4 305.3.4 Barriers adjacent to latch release mechanisms. Where a latch release mechanism is located on the inside of a barrier, openings in the door, gate and barrier within 18 inches (457 mm) of the latch shall not be greater than 1/2 inch (12.7 mm) in any dimension.

R327.4 305.4 Structure wall as a barrier. Where a wall of a dwelling or structure serves as part of the barrier and where doors, gates, or windows provide direct access to the pool or spa through that wall, one of the following shall be required:

1. Operable windows having a sill height of less than 48 inches (1219 mm) above the indoor finished floor, ~~and doors, and gates~~ shall have an alarm that produces an audible warning when the window, door or their screens are opened. The alarm shall be *listed* and *labeled* as a water hazard entrance alarm in accordance with UL 2017. ~~In dwellings or structures not required to be Accessible units, Type A units or Type B units, the operable parts of the alarm deactivation switches shall be located 54 inches (1372 mm) or more above the finished floor. In dwellings or structures required to be Accessible units, Type A units or Type B units, the operable parts of the alarm deactivation switches shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the finished floor.~~
2. In dwellings not required to be Accessible units, Type A units or Type B units, the operable parts of the alarm deactivation switches shall be located at not less than 54 inches (1372 mm) above the finished floor.
3. In dwellings required to be Accessible units, Type A units or Type B units, the operable parts of the alarm deactivation switches shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1219 mm) above the finished floor.
4. In structures other than dwellings, the operable parts of the alarm deactivation switches shall be located not greater than 54 inches (1372 mm) and not less than 48 inches (1220 mm) above the finished floor.
- ~~5.2.~~ A safety cover that is *listed* and *labeled* in accordance with ASTM F 1346 is installed for the pools and spas.
- ~~6.3.~~ An *approved* means of protection, such as self-closing doors with self-latching devices, is provided. Such means of protection shall provide a degree of protection that is not less than the protection afforded by Item 1 or 2.

R327.5 ~~305.5~~ On-ground residential pool structure as a barrier. An on-ground *residential* pool wall structure or a barrier mounted on top of an on-ground *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 inches (1219 mm) above grade for the entire perimeter of the pool, the wall complies with the requirements of Section ~~327.2~~ ~~305.2~~ and the pool manufacturer allows the wall 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 inches (1219 mm) 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 ~~327.2~~ ~~305.2~~.
3. Ladders or steps used as means of access to the pool are capable of being secured, locked or removed to prevent access except where the ladder or steps are surrounded by a barrier that meets the requirements of Section ~~R327~~ ~~305~~.
4. Openings created by the securing, locking or removal of ladders and steps do not allow the passage of a 4-inch (102 mm) diameter sphere.
5. Barriers that are mounted on top of on-ground *residential* pool walls are installed in accordance with the pool manufacturer's instructions.

R327.6 ~~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 inches (457 mm), a barrier is not required between the natural body of water shoreline and the pool or spa.

R327.7 ~~305.7~~ Natural topography. Natural topography that prevents direct access to the pool or spa area shall include but not be 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 Sections R327.2 ~~305.2~~ through R327.5 ~~305.5~~.

Supporting Information (Required):

REASON: Appendix V in the 2019 Denver Building Code IRC amendments is taken from Section 305 of the 2018 International Swimming Pool and Spa Code (ISPSC), with the exception of Section 305.1 General, which is the language from the 2015 ISPSC. It does not appear to be the best presentation of this information to include a mix of 2015 and 2018 ISPSC provisions and place them in a new IRC appendix, only to have Section R327, titled “Swimming pools, spas, and hot tubs, reference to the appendix.

PURPOSE: This proposal removes the Denver added appendix U (X in the 2021 baseline) and reprints the exact language from the 2021 ISPSC Section 305 and places it directly in IRC Section R327. However, it does not include ISPSC Section 305.8 as that section is only related to pools at IBC structures.

SUBSTANTIATION: This presentation of the barrier provisions will be more streamlined, accessible, and easier to navigate.

Other Regulations Proposed to be Affected

There is an appendix to the IBC for barriers, but it does have amendments that differ from the residential pool barriers. It is recommended that the IBC match the ISPSC provisions as closely as is reasonably decided.

Referenced Standards:

List any new referenced standards that are proposed to be referenced in the code.

Impact:

How will this proposal impact cost and restrictiveness of code? (“X” answer for each item below)

Cost of construction: ___ Increase ___ Decrease _x_ No Impact
Cost of design: ___ Increase ___ Decrease _x_ No Impact
Restrictiveness: ___ Increase ___ Decrease _x_ No Impact

Departmental Impact (City use only):

This amendment proposal increases/decreases/is neutral to the cost of plans review.
This amendment increases/decreases/is neutral to the cost of inspections.