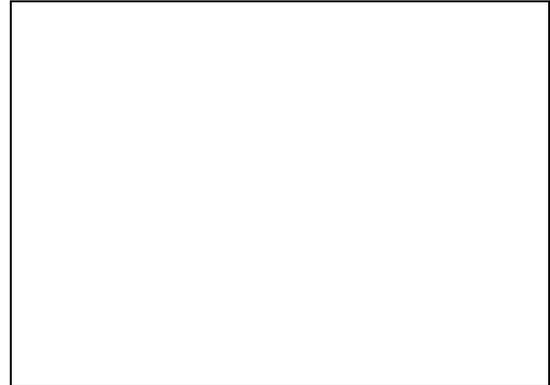




RESIDENTIAL SWIMMING POOL REQUIREMENTS

The installation of residential swimming pools shall be in accordance with the 2015 edition of the International Swimming Pool and Spa Code (ISPSC) (portion attached).

The following information must be provided to complete the process for application of permit to install swimming pools, spas and hot tubs.



1. **Design and Construction:** provide manufacturer's information showing pool design and construction in conformance with:
 - a. In ground: ANSI/NSPI-5 as listed in ISPSC Chapter 8
 - b. On ground: ANSI/NSPI-5 as listed in ISPSC Chapter 7
 - c. Flood hazard areas: Shall show compliance with Section 304 of the ISPSC

2. **Barrier Requirements:** provide specific details showing compliance with Barrier Requirements listed in Section 305. Details shall show:
 - a. An overhead layout of the barrier
 - b. Construction details of the barrier showing compliance with section 305 (Attached)

Where a wall of a structure serves as part of the barrier as allowed through ISPSC 305.4, show compliance with items 1, 2 or 3.

Where a powered safety cover is used in lieu of a barrier, provide manufacturer's specifications showing compliance with ASTM F 1346.

3. **Entrapment protection:** provide manufacturer's details showing compliance with Section 310/APSP-7.

4. **Heated pools and spas:** Note on application whether electric or propane heat (with tank size if propane)
 - a. Pools and Permanent spas: Provide specific details showing compliance with WSEC Section C404.11, attached.
 - b. Portable spas: Provide specific details showing compliance with WSEC Section C404.12, attached.
 - c. New propane tanks require a permit before placement for tanks 125 gallons or larger. Provide a separate application for the propane tank and include the location on your site plan with distances to structures and property lines.

2015 Washington State Energy Code Excerpt

C404.10.11 Energy consumption of pools and permanent spas (Mandatory). The energy consumption of pools and permanent spas shall be controlled by the requirements in Sections C404.11.1 through C404.11.4.

C404.11.1 Heaters. Heat pump pool heaters shall have a minimum COP of 4.0 determined in accordance with ASHRAE Standard 146. Other pool heating equipment shall comply with the applicable efficiencies in Section C404.2

The electric power to all heaters shall be controlled by a readily accessible on-off switch that is an integral part of the heater, mounted on the exterior of the heater, or external to and within 3 feet of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. Gas fired heaters shall not be equipped with constant burning pilot lights.

C404.11.2 Time switches. Time switches or other control method that can automatically turn off and on heaters and pump motors according to a preset schedule shall be installed for heaters and pump motors. Heaters and pump motors that have built in time switches shall be in compliance with this section.

Exceptions:

1. Where public health standards require 24-hour pump operation.
2. Pumps that are required to operate solar-and waste-heat-recovery pool heating systems.

C404.11.3 Covers. Heated pools and in-ground permanent spas shall be provided with a vapor-retardant cover on or at the water surface. Pools heated to a more than 90° F shall have a pool cover with a minimum insulation value of R-12, and the sides and bottom of the pool shall also have a minimum insulation value of R-12.

C404.11.4 Heat recovery. Heated indoor swimming pools, spas or hot tubs with water surface area greater than 200 square feet shall provide for energy conservation by an exhaust air heat recovery system that heats ventilation air, pool water or domestic hot water. The heat recovery system shall be configured to decrease the exhaust air temperature at design heating conditions (80° F indoor) by 36°F (10°C)

Exception: Pools, spas or hot tubs that include system(s) that provide equivalent recovered energy on an annual basis through one of the following methods:

1. Renewable energy;
2. Dehumidification heat recovery;
3. Waste heat recovery; or
4. A combination of these system sources capable of and configured to provide at least 70 percent of the heating energy required over an operating season.

C404.12 Energy consumption of portable spas (Mandatory). The energy consumption of electric-powered portable spas shall be controlled by the requirements of APSP 14.

C404.13 Service water-heating system commissioning and completion requirements. Service water-heating systems, swimming pool water-heating systems, spa water-heating systems and the controls for those systems shall be commissioned and completed in accordance with Section C408.

GENERAL COMPLIANCE

permanent *residential* spas shall be controlled in accordance with the requirements of APSP 15.

SECTION 304 FLOOD HAZARD AREAS

304.1 General. The provisions of Section 304 shall control the design and construction of pools and spas installed in *flood hazard areas*.

[BS] 304.2 Determination of impacts based on location. Pools and spas located in *flood hazard areas* indicated within the *International Building Code* or the *International Residential Code* shall comply with Section 304.2.1 or 304.2.2.

Exception: Pools and spas located in riverine *flood hazard areas* that are outside of designated floodways and pools and spas located in *flood hazard areas* where the source of flooding is tides, storm surges or coastal storms.

[BS] 304.2.1 Pools and spas located in designated floodways. Where pools and spas are located in designated floodways, documentation shall be submitted to the code official that demonstrates that the construction of the pools and spas will not increase the design flood elevation at any point within the jurisdiction.

[BS] 304.2.2 Pools and spas located where floodways have not been designated. Where pools and spas are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool or spa and any associated grading and filling, will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.

[BS] 304.3 Pools and spas in coastal high-hazard areas. Pools and spas installed in coastal hazard areas shall be designed and constructed in accordance with ASCE 24.

[BS] 304.4 Protection of equipment. Equipment shall be elevated to or above the design flood elevation or be anchored to prevent flotation and protected to prevent water from entering or accumulating within the components during conditions of flooding.

304.5 GFCI protection. Electrical equipment installed below the design flood elevation shall be supplied by branch circuits that have ground-fault circuit interrupter protection for personnel.

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.

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 305.2.1 through 305.7.

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).

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

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.

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 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 (102 mm) 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 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 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 $1\frac{3}{4}$ inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed $1\frac{3}{4}$ inches (44 mm) 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 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 $1\frac{3}{4}$ inches (44 mm).

305.2.7 Chain link dimensions. The maximum opening formed by a chain link fence shall be not more than $1\frac{3}{4}$ 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 $1\frac{3}{4}$ inches (44 mm).

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 $1\frac{3}{4}$ inches (44 mm). The angle of diagonal members shall be not greater than 45 degrees (0.79 rad) from vertical.

305.2.9 Clear zone. 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 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 inches (508 mm) 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 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

305.4 Structure wall as a barrier. Where a wall of a dwelling or structure serves as part of the barrier and where doors 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 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. A *safety cover* that is *listed* and *labeled* in accordance with ASTM F 1346 is installed for the pools and spas.
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.

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 inches (1219 mm) 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 wall to serve as a barrier.

CodeNotes™



2015 ISPSC® Permanent Inground Residential Swimming Pool Entry/Exit Requirements

Introduction

This CodeNotes™ provides an overview of entry/exit requirements of the 2015 *International Swimming Pool and Spa Code*® (ISPSC®) as they pertain to permanent inground residential swimming pools.

All pools shall have a means of entry and exit in the shallow areas if water depth exceeds 24 inches (610 mm) at the shallowest point. The means of entry and exit shall be located on the shallow side of any first slope change (Ref. Section 809.2 of the 2015 ISPSC).

Entries and exits shall consist of one, or a combination of, the following: steps, stairs, ladders, treads, ramps, beach entries, underwater seats, benches, swimouts, and other approved designs (Ref. Section 809.2 of the 2015 ISPSC). All treads shall have slip resisting surfaces. (Ref. Section 322.3 and 322.4 of the 2015 ISPSC).

A secondary means of entry and exit shall be provided in the deep area of the pool if the water depth exceeds 5 feet (1.52 m) (Ref. Section 809.3 of the 2015 ISPSC). Pools over 30 feet (914cm) in width at the deep area shall have an entry and exits on both sides of the deep area of the pool (Ref. Section 809.4 of the 2015 ISPSC).

Recessed Treads

Recessed treads shall have a minimum depth of not less than 5 inches (127 mm) and a width of not less than 12 inches (305 mm). The vertical distance between the pool coping edge, deck, or step surface and the uppermost recessed tread shall not be greater than 12 inches (305 mm). A recessed tread is a pocket built into the wall of a pool that is large enough for a foothold. A vertical series of recessed tread provides the user with a ladder effect to climb out of the pool. Slip resistant surfaces on recessed treads are required and especially necessary in a wet environment.

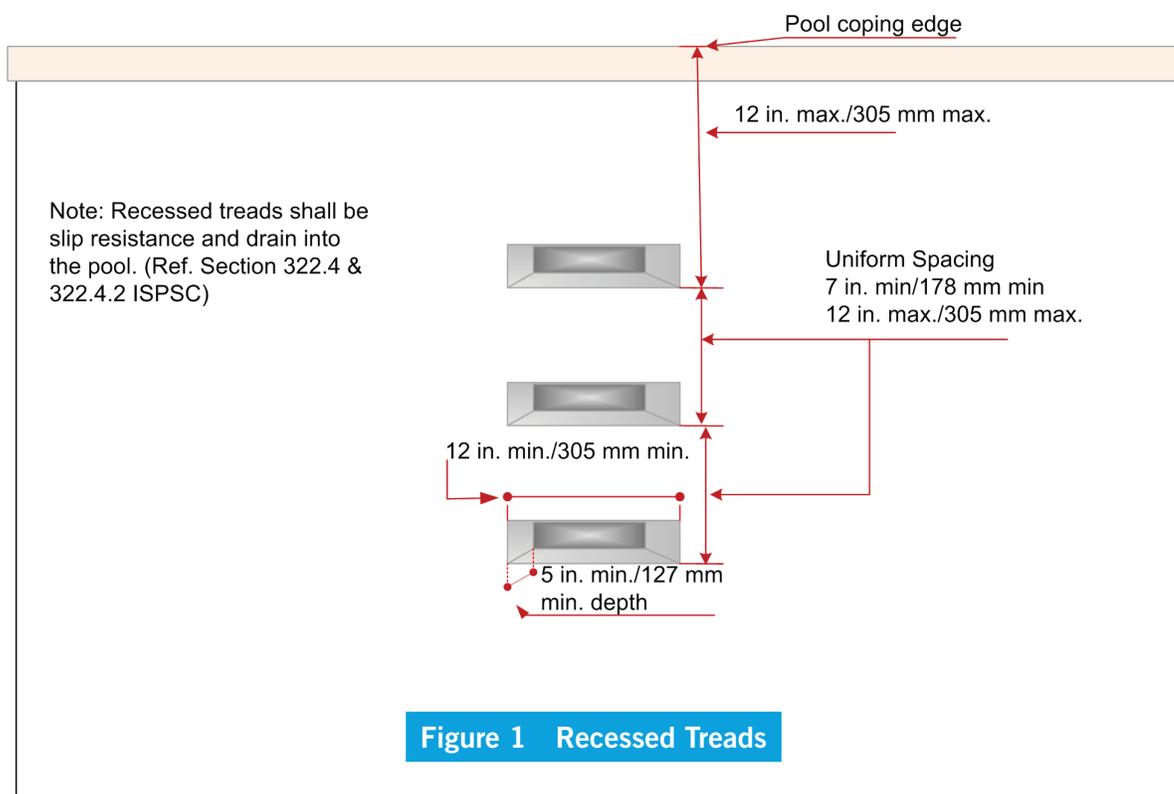


Figure 1 Recessed Treads

Pool Stairs

Section 809.5.1 requires that treads dimension have a minimum unobstructed horizontal depth of 10 inches (254 mm) and a minimum unobstructed surface area of 240 square inches (0.15 m²). The thinking is that a minimum tread depth provides for the entire placement of an adult foot. The minimum area of the step provides for an adult to stand comfortably with both feet on the step.

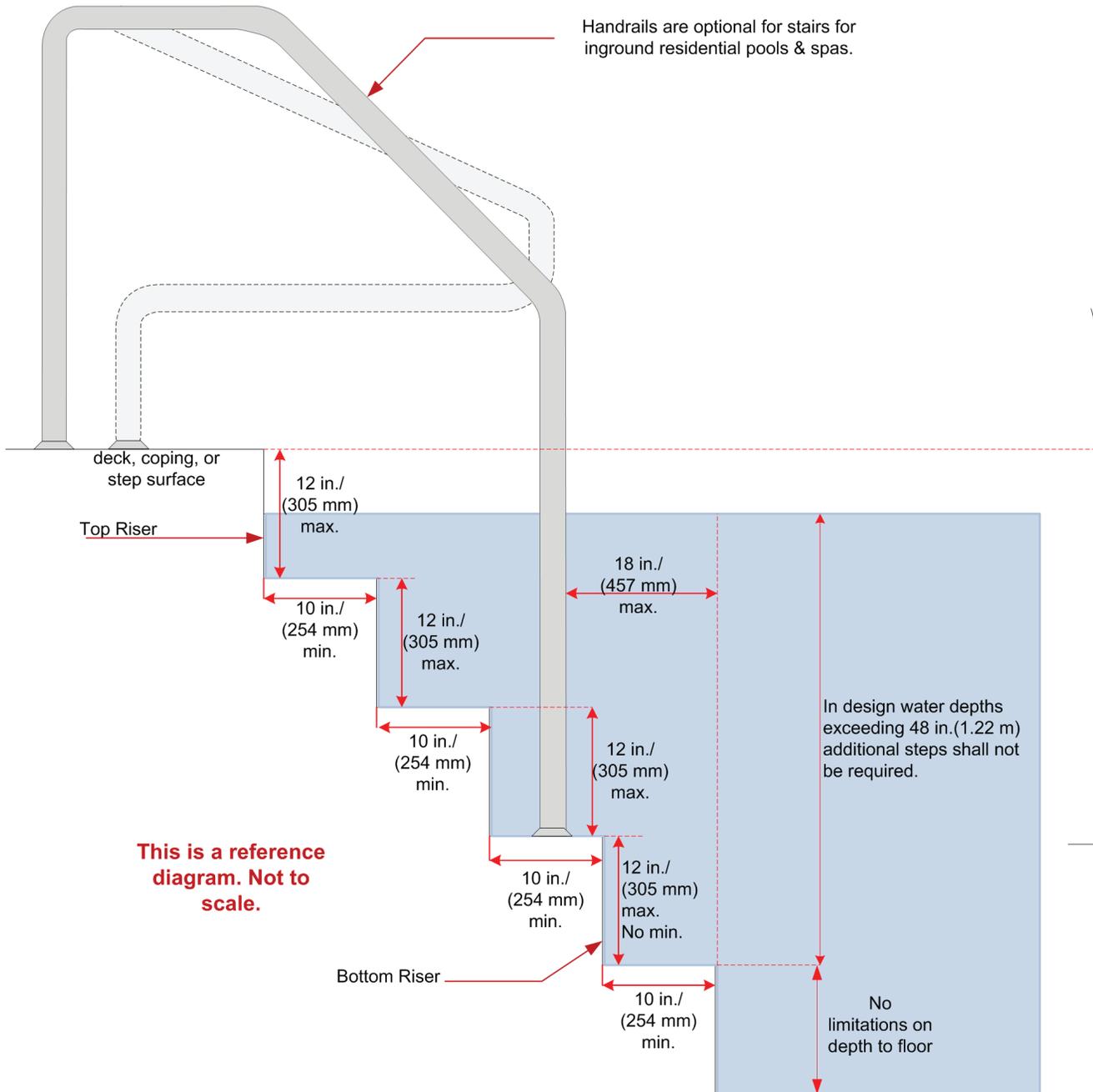


Figure 2 Pool Stairs Side View

Pool Ladder & Handrail Requirements

Climbing a ladder is nearly impossible without using two hands on separate handhold or handrails. The clear distance between ladder handrails shall be not less than 17 inches (432 mm) and not greater than 24 inches (610 mm). The separation between the handrails is necessary to provide stability for the ladder user. See *next page for a side view*.

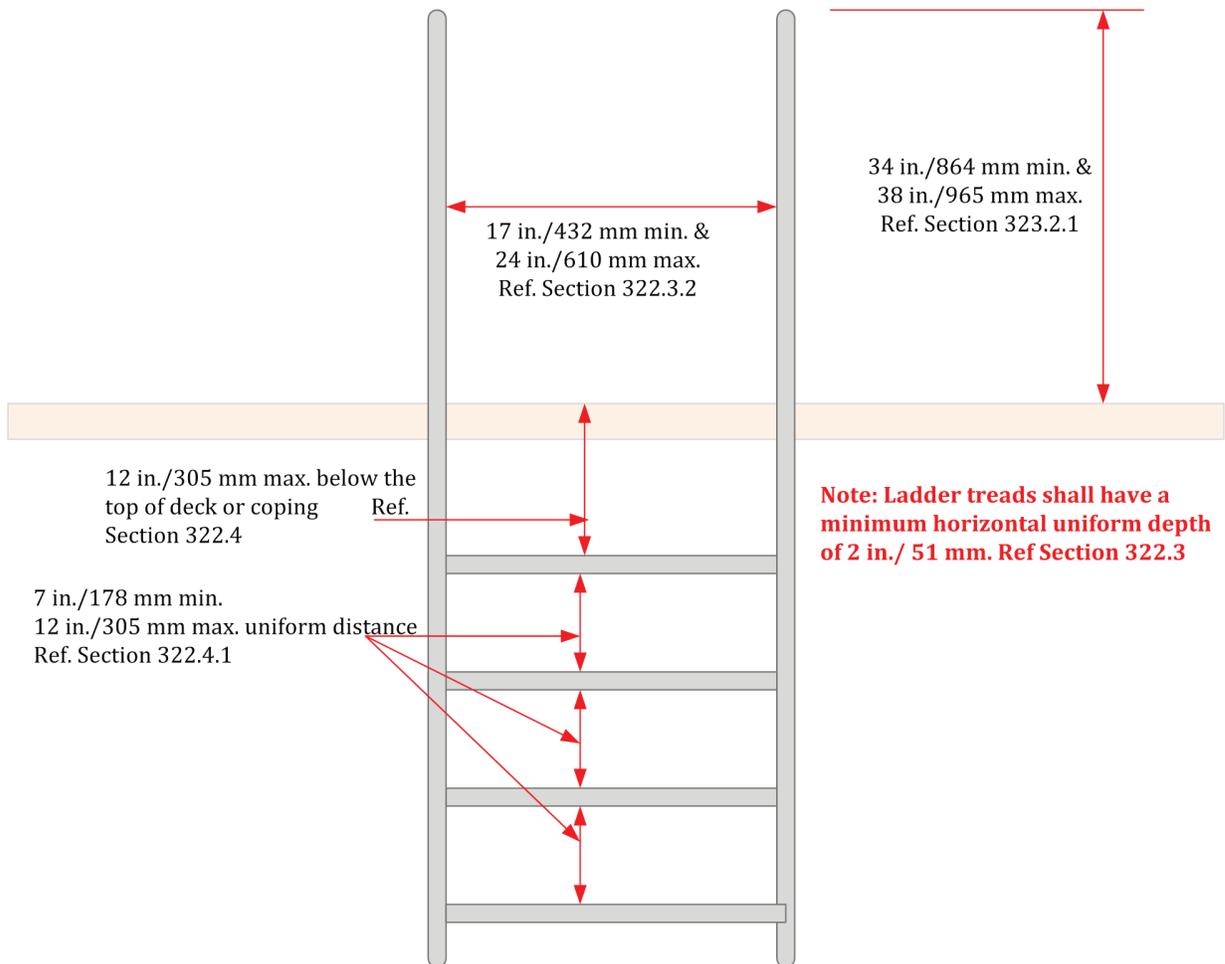


Figure 3 Pool Ladder

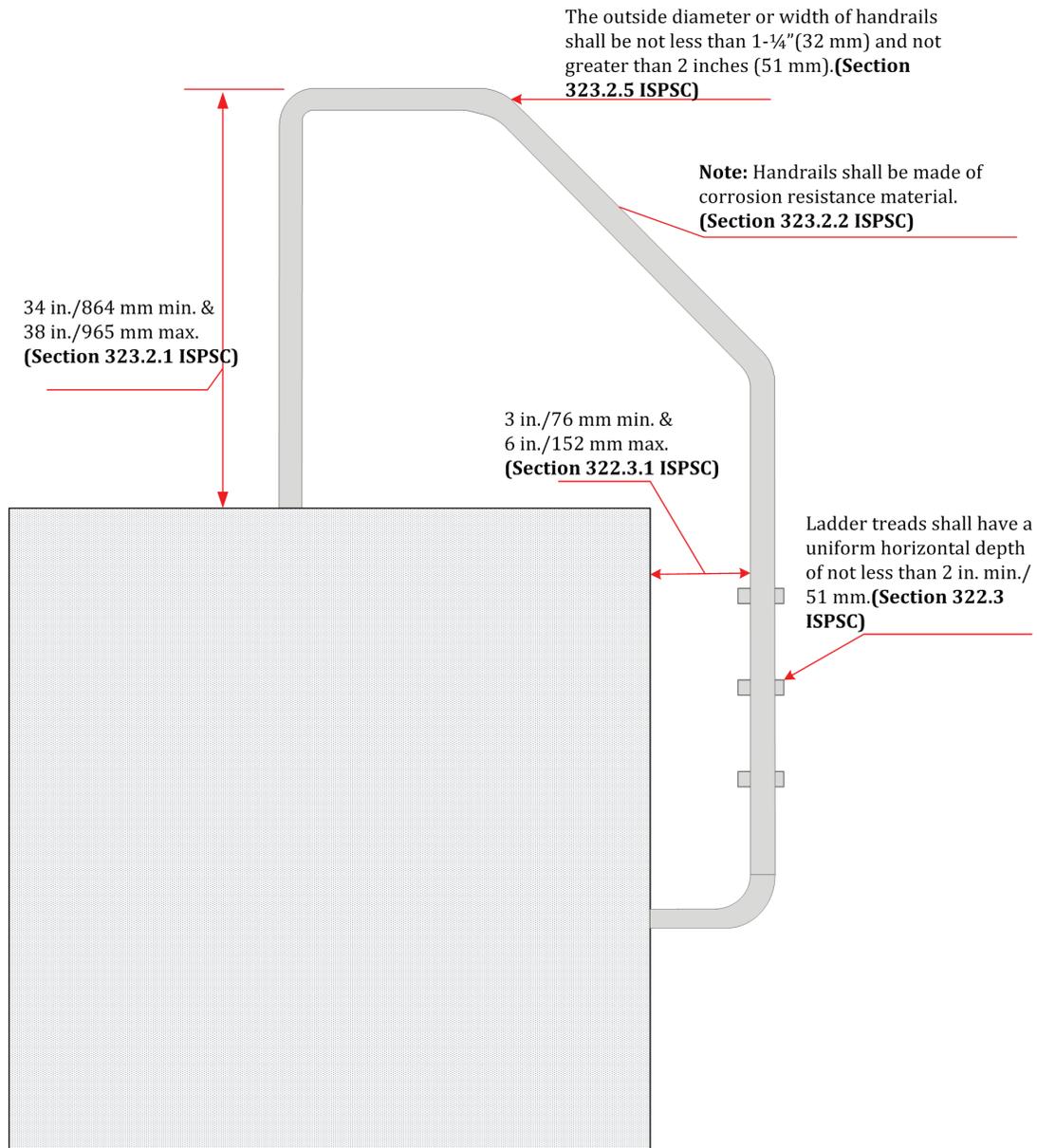


Figure 4 Handrails (side view)



Please contact the International Code Council to order the *International Swimming Pool and Spa Code*, *ISPSC Commentary* or other code support publications.

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