



## Pool Barriers (Fences)

### Brief summary of Barrier Requirements for Outdoor Residential Swimming Pools:

The barrier must completely surround the swimming pool and must obstruct access to the swimming pool.

The barrier must be at least 4 feet (48 inches) high.

In the case of an above-ground pool, the barrier may be at ground level or mounted on top of the pool structure; however, if the barrier is mounted on top of the pool structure, the space between the top of the pool structure and the bottom of the barrier cannot exceed 4 inches.

A building wall can form part of the required barrier. However, where a wall of a dwelling serves as part of the barrier, at least one of the following requirements must be satisfied:

the pool must be equipped with a powered safety cover

all doors with direct access to the pool through that wall must be equipped with an alarm

other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body

In the case of an above-ground pool, the pool structure itself can serve as a part of the required barrier, provided that the pool structure is sufficiently rigid to obstruct access to the pool. However, 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, then:

the ladder or steps shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier

when the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter sphere.

Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers.

Specific Barrier requirements can be found in the DOS document titled "[Current Requirements for Swimming Pools contained in the Uniform Fire Prevention and Building Code \(The "Uniform Code"\)](#)"

Barrier requirements for One-and Two-Family Dwelling Swimming Pools can be found in Appendix G, Residential Code of New York State

Barrier requirements for Residential Swimming Pools can be found in Chapter 31, Section 3109, Building Code of New York State

Barriers requirements for Public Swimming Pools can be found in Chapter 31, Section 3109, Building Code of New York State

## BARRIER REQUIREMENTS

**SRAG105.1 Application.** The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas and hot tubs.

**SRAG105.2 Outdoor swimming pool.** An outdoor swimming pool, including an in-ground, aboveground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219 mm) 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 (51 mm) 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 aboveground 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 (102 mm).
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) 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 (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) 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 (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.
6. Maximum mesh size for chain link fences shall be a 1.25-inch (32 mm) square unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to not more than 1.75 inches (44 mm).
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 1.75 inches (44 mm).
8. Access gates shall comply with the requirements of SRAG105.2, Items 1 through 7, and shall be securely locked with a key, combination or other child-proof lock sufficient to prevent access to the swimming pool through such gate when the swimming pool is not in use or supervised. 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 (1372 mm) 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 (76 mm) below the top of the gate, and
  - 8.2. The gate and barrier shall have no opening greater than 0.5 inch (12.7 mm) within 18 inches (457 mm) 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 F1346; or 9.2. All 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 its screen, if present, are opened. The alarm shall sound continuously for a minimum of 30 seconds immediately after the door is opened and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as touchpad or switch, to temporarily deactivate the alarm for a single opening. Such deactivation shall last for not more than 15 seconds. The deactivation switch(es) shall be located at least 54 inches (1372 mm) 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 so 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 aboveground 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, then:

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 SRAG105.2, 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.

**503.3.3.7 Balancing.** The HVAC system design shall provide means for balancing air and water systems. Balancing mechanisms shall include, but not be limited to, dampers, temperature and pressure test connections, and balancing valves.

**SECTION 504  
SERVICE WATER HEATING**

**504.1 Scope.** The purpose of this section is to provide criteria for design and equipment selection that will produce energy savings when applied to service water heating. Water supplies to ice-making machines and refrigerators shall be taken from a cold-water line of the water distribution system.

**504.2 Water heaters, storage tanks and boilers.** Water heaters, storage tanks and boilers shall meet the performance criteria set forth in Sections 504.2.1 and 504.2.2.

**504.2.1 Performance efficiency.** Water heaters and hot water storage tanks shall meet the minimum performance of water-heating equipment specified in Table 504.2. Where multiple criteria are listed, all criteria shall be met.

**Exception:** Storage water heaters and hot water storage tanks having more than 140 gallons (530 L) of storage capacity need not meet the standby loss (*SL*) or heat loss (*HL*) requirements of Table 504.2 if the tank surface area is thermally insulated to R-12.5 and if a standing pilot light is not used.

**504.2.2 Combination service water-heating/space-heating boilers.** Service water-heating equipment shall not be dependent on year-round operation of space-heating boilers; that is, boilers that have as another function winter space heating.

**Exceptions:**

1. Systems with service/space-heating boilers having a standby loss (Btu/h) (*W*) less than:

$$\frac{13.3 \text{ } pmd \div 400}{n} \quad \text{(Equation 5-12)}$$

determined by the fixture count method where:

*pmd* = Probable maximum demand in gallons/hour as determined in accordance with Chapter 37 of the ASHRAE *HVAC Systems and Applications Handbook*.

*n* = Fraction of year when outdoor daily mean temperature exceeds 64.9°F (18°C).

The standby loss is to be determined for a test period of 24-hour duration while maintaining a boiler water temperature of 90°F (32.2°C) above an ambient of 60 to 90°F (16 to 32°C) and a 5-foot (1524 mm) stack on appliance.

2. For systems where the use of a single heating unit will lead to energy savings, such unit shall be utilized.

**504.3 Swimming pools.** Swimming pools shall be provided with energy-conserving measures in accordance with Sections 504.3.1 through 504.3.3.

**504.3.1 On-off switch.** All pool heaters shall be equipped with an ON-OFF switch mounted for easy access to allow shutting off the operation of the heater without adjusting the thermostat setting and to allow restarting without relighting the pilot light.

**504.3.2 Pool covers.** Heated swimming pools shall be equipped with a pool cover.

**Exception:** Outdoor pools deriving over 20 percent of the energy for heating from renewable sources (computed over an operating season) are exempt from this requirement.

**504.3.3 Time clocks.** Time clocks shall be installed so that the pump can be set to run in the off-peak electric demand period and can be set for the minimum time necessary to maintain the water in a clear and sanitary condition in keeping with applicable health standards.

**504.4 Pump operation.** Circulating hot water systems shall be arranged so that the circulation pump(s) can be conveniently turned off, automatically or manually, when the hot water system is not in operation.

**504.5 Pipe insulation.** For recirculating systems, piping heat loss shall be limited to a maximum of 17.5 Btu/h per linear foot (16.8 W/m) of pipe in accordance with Table 504.5, which is based on design external temperature no lower than 65°F (18°C). Other design temperatures must be calculated.

**Exception:** Piping insulation is not required when the heat loss of the piping, without insulation, does not increase the annual energy requirements of the building.

**504.6 Conservation of hot water.** Hot water shall be conserved in accordance with Section 504.6.1.

**504.6.1 Showers.** Shower heads shall have a maximum flow rate of 2.5 gallons per minute (gpm) (0.158 L/s) at a pressure of 80 pounds per square inch (psi) (551 kPa) when tested in accordance with ASME A112.18.1.

## 1220.5. Swimming pool alarms. [amended text 12/14/2006]

**(a) Purpose.** Paragraph (b) of subdivision (14) of section 378 of the Executive Law, as added by Chapter 450 of the Laws of 2006, requires that the New York State Uniform Fire Prevention and Building Code (the Uniform Code) provide that any "residential or commercial swimming pool constructed or substantially modified after the effective date of this paragraph (December 14, 2006) shall be equipped with an acceptable pool alarm capable of detecting a child entering the water and of giving an audible alarm." The Introducer's Memorandum in Support of Chapter 450 states, in pertinent part, that "drowning is the second leading cause of unintentional injury-related deaths in children between the ages of one and fourteen nation wide, and the third leading cause of injury-related deaths of children in New York. . . . (T) echnological advances have produced several different types of pool alarms designed to sound a warning if a child falls into the water. When used in conjunction with access barriers, these alarms provide greater protection against accidental pool drownings." This section and section 1221.3 of Part 1221 of this Title are intended to implement the provisions of Executive Law section 378(14)(b).

**(b) Definitions.** The terms "approved," "commercial swimming pool," "residential swimming pool," "swimming pool," "substantial damage," and "substantial modification" shall, for the purposes of this section, have the meanings ascribed in subdivision (b) of section 1221.3 of Part 1221 of this Title.

**(c) Pool alarms.** Each residential swimming pool installed, constructed or substantially modified after December 14, 2006 and each commercial swimming pool installed, constructed or substantially modified after December 14, 2006 shall be equipped with an approved pool alarm which:

- (1) is capable of detecting a child entering the water and giving an audible alarm when it detects a child entering the water;
- (2) is audible poolside and at another location on the premises where the swimming pool is located;
- (3) is installed, used and maintained in accordance with the manufacturer's instructions;
- (4) is classified by Underwriter's Laboratory, Inc. (or other approved independent testing laboratory) to reference standard ASTM F2208, entitled "Standard Specification for Pool Alarms," as adopted in 2002 and editorially corrected in June 2005, published by ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428; and
- (5) is not an alarm device which is located on person(s) or which is dependent on device(s) located on person(s) for its proper operation.

**(d) Multiple pool alarms.** A pool alarm installed pursuant to subdivision (c) of this section must be capable of detecting entry into the water at any point on the surface of the swimming pool. If necessary to provide detection capability at every point on the surface of the swimming pool, more than one pool alarm shall be installed.