

Pool or Hot Tub Code Requirements

Village of Penn Yan

Office of Zoning and Building Inspection

www.villageofpennyan.com

A building permit is required in the Village of Penn Yan for the installation of a pool or hot tub.

Application checklist

- ✓ Completed [building permit application](#), fee, insurance
- ✓ Plot plan showing existing structures & location of proposed work
- ✓ Drawing design of proposed work
- ✓ Brochure of unit being installed
- ✓ Pool alarm info/pictures of latches
- ✓ Door alarm
- ✓ Fence

Temporary/Storable Swimming Pools, Spas and Hot Tubs

Storable pools are swimming, wading or immersion pools that are intended to be stored when not in use, constructed on or above the ground and are capable of holding water to a maximum depth of 42 inches, or a pool constructed on or above ground with non-metallic, molded polymeric walls or inflatable fabric walls, regardless of dimension.

The maximum water depth of 42" does not apply to inflatable swimming pools.

Storable pool pumps

- Cord-connected pool filters must be approved system and have a double insulation or equivalent cord.
- Cord-connected pool filter pumps must have a ground-fault circuit interrupter (GFCI) on the power supply cord located within 12" of the attached plug or that is an integral part of the attached plug on the cord.

Receptacle (Outlet) and Wiring Method for Storable Pool Pump

- Any receptacle, existing or new, cannot be located closer than 6' on the inside wall of the storable pool.
- Receptacle must be grounded, must be ground fault circuit interrupter (GFCI) protected, and the tamper resistant (TR) and weather resistant (WR) type receptacle.
- Receptacle must have an in-use, extra-duty weatherproof cover that can be closed when the cord is plugged in.
- An automatic timer (time switch) must be installed on storable swimming pool pumps, per C404.9.2.

Luminaries (lights) for Storable Pools, if used

- Luminaries cannot have any exposed metal parts and must be listed for the purpose.
- Luminaries 15 volts or less must:
 - Have a luminaire lamp that operates at 15 volts or less.

- Have an impact-resistant polymeric lens, luminaire body and a transformer enclosure.
 - Have a transformer listed for swimming pools with a primary rating not over 150 volts.
- Luminaries over 15 volts, but not over 150 volts must:
 - Have an impact-resistant polymeric lens and luminaire body.
 - Have ground fault circuit interrupter (GFCI) protection.

Permanent Barriers

- If the side of any swimming pool, either permanent or storable, that is capable of holding 24 inches or more of water, is less than 48 inches high at any point. Then a permanent barrier that meets all requirements of New York State Residential Code R326.5.2 is to be installed.

Pool Alarm

- All swimming pools installed or modified after December 14, 2006 are required to be equipped with an approved pool alarm that complies with ASTM F2208 (Standard Safety Specification for Residential Pool Alarms).

Other

- Building permits are required for any pools, either permanent or storable, that are capable of holding 24 inches or more of water.
- No electrical receptacles are permitted within six feet of the inside walls of a storable pool wall.

Questions can be answered by contacting:

Village of Penn Yan
Office of Zoning and Building Inspection
111 Elm Street
Penn Yan, NY 14527
315-536-6397
www.villageofpennyan.com

PERMANENTLY INSTALLED SWIMMING POOLS ELECTRICAL WIRING REQUIREMENTS 2014 National Electrical Code

www.NYEIA.com

PERMANENTLY INSTALLED SWIMMING POOLS ARE THOSE THAT ARE CONSTRUCTED IN THE GROUND OR PARTIALLY IN THE GROUND, AND ALL OTHERS CAPABLE OF HOLDING WATER WITH A DEPTH GREATER THAN 42 INCHES (1067 MM)

1) Pool Pump Receptacle (Outlet) and Wiring Method

- a. If a pump motor receptacle is located between 6' – 10' from the inside pool wall, the receptacle must be a single outlet, grounded, and Ground Fault Circuit Interrupter (GFCI) protected.
- b. Receptacle must have an extra-duty, in-use, weatherproof cover that can be closed when the cord is plugged in.
- c. The circuit line for the pump motor must be a continuous line going directly to the panel box, and is to be isolated from all other receptacles.
- d. Wire for the pump motor shall not be less than #12 AWG insulated copper grounded wire, and must be in conduit. (Exception: When entering a building the wire can change to NM) (Cannot use NM wire in conduit).
- e. Conduit
 - i. PVC – All PVC conduit* must be buried at least 18" deep (12" if GFCI protected).
 - ii. Metal – All Rigid Metal Conduit* must be at least 6" deep.

* Wires used in conduit must be single strand wires (ex: THWN, etc - NO NM or UF CABLE in Conduit).

2) Convenience Receptacle (Outlet) and Wiring Method

- a. At least one (1) 15- or 20-ampere convenience receptacle must be located not closer than 6' but not further than 20' from the outside pool wall (Can be existing and/or wired with any approved wiring method).
- b. Convenience receptacle must be Ground Fault Circuit Interrupter (GFCI) protected, Tamper Resistant (TR), and Weather Resistant (WR) type receptacle.
- c. Must have an extra-duty, in-use, weatherproof cover that can be closed when in use (for all wet locations).
- d. Must be separate from the pool pump receptacle wiring.
- e. Wiring
 - i. UF cable if buried must be at least 24" deep.
 - ii. PVC – All PVC conduits* must be buried at least 18" deep (12" if GFCI protected).
 - iii. Metal – All Rigid Metal Conduits* must be at least 6" deep

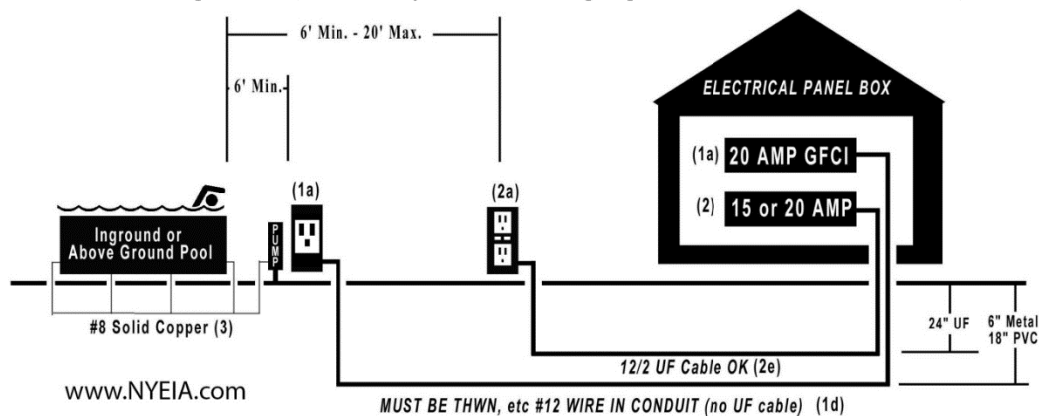
* Wires used in conduit must be single strand wires (ex: THWN, etc. - NO NM or UF CABLE in Conduit).

3) Bonding The Pool

- a. All metal parts must be bonded together using a #8 (or larger) solid copper wire.
- b. Must use non-corrosive clamps.
- c. Conductive pool shells must be bonded in a minimum of four (4) equal points uniformly spaced around the pool
- d. Nonconductive pool shells must have a #8 (or larger) solid, bare copper wire 18"-24" from the inside pool wall under the perimeter surface 4"-6" below the final grade.
- e. A minimum of nine (9) square inches of corrosion resistant metal must be in the water to bond the water.

4) Other

- a. Building Permits are required. Secure a Building Permit from your municipality prior to beginning work.
- b. Pool Alarms are required. (Check with your local Building Department for additional information).
- c. Pool Pump Timers: (Check with your local Building Department for additional information).



PLEASE CONTACT YOUR LOCAL INSPECTOR IF YOU HAVE ANY QUESTIONS

Residential Code of New York State
Appendix G Swimming Pools, Spas and Hot Tubs
Section G101 General

G101.1 General

The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one- or two-family dwelling.

Section G102 Definitions

G102.1 General

For the purposes of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

ABOVE-GROUND/ON-GROUND POOL. See "Swimming pool."

BARRIER PERMANENT. A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

BARRIER TEMPORARY. An approved temporary fence, permanent fence, the wall of a permanent structure, any other structure, or any combination thereof that prevents access to the swimming pool by any person not engaged in the installation or construction of the swimming pool during its installation or construction.

HOT TUB. See "Swimming pool."

IN-GROUND POOL. See "Swimming pool."

RESIDENTIAL. That which is situated on the premises of a detached one- or two-family dwelling or a one-family townhouse not more than three stories in height.

SPA, NONPORTABLE. See "Swimming pool."

SPA, PORTABLE. A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product.

SUBSTANTIAL DAMAGE. For the purpose of determining compliance with the pool alarm provisions of this appendix, damage of any origin sustained by a swimming pool whereby the cost of restoring the swimming pool to its before-damaged condition would equal or exceed 50 percent of the market value of the swimming pool before the damage occurred.

SUBSTANTIAL MODIFICATION. For the purpose of determining compliance with the pool alarm provisions of this appendix, any repair, alteration, addition or improvement of a swimming pool, the cost of which equals or exceeds 50 percent of the market value of the swimming pool before the improvement or repair is started. If a swimming pool has sustained substantial damage, any repairs are considered substantial modification regardless of the actual repair work performed.

SWIMMING POOL. Any structure, basin, chamber or tank which is intended for swimming, diving, recreational bathing or wading and which contains, is designed to contain, or is capable of containing

water more than 24 inches (610 mm) deep at any point. This includes in-ground, above-ground and on-ground pools; indoor pools; hot tubs; spas; and fixed-in-place wading pools.

SWIMMING POOL, INDOOR. A swimming pool which is totally contained within a structure and surrounded on all four sides by the walls of the enclosing structure.

SWIMMING POOL, OUTDOOR. Any swimming pool which is not an indoor pool.

Section G103 Swimming Pools

G103.1 In-Ground Pools

In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Section AG108.

G103.2 Above-Ground and On-Ground Pools

Above-ground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in Section AG108.

Section G104 Spas and Hot Tubs

G104.1 Permanently Installed Spas and Hot Tubs

Permanently installed spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-3 as listed in Section AG108.

G104.2 Portable Spas and Hot Tubs

Portable spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-6 as listed in Section AG108.

Section G105 Barrier Requirements

G105.1 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.

G105.2 Temporary Barriers

An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa shall be surrounded by a temporary barrier during installation or construction and shall remain in place until a permanent barrier in compliance with Section AG105.3 is provided.

Exceptions:

1. Above-ground or on-ground pools where the pool structure is the barrier in compliance with Section AG105.3.
2. Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AG107, provided that such safety cover is in place during the period of installation or construction of such hot tub or spa. The temporary removal of a safety cover as required to facilitate the installation or construction of a hot tub or spa during periods when at least one person engaged in the installation or construction is present is permitted.

G105.2.1 Height

The top of the temporary 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.

G105.2.2 Replacement by a Permanent Barrier

A temporary barrier shall be replaced by a complying permanent barrier within either of the following periods:

1. 90 days of the date of issuance of the building permit for the installation or construction of the swimming pool; or
2. 90 days of the date of commencement of the installation or construction of the swimming pool.

G105.2.21 Replacement extension

Subject to the approval of the code enforcement official, the time period for completion of the permanent barrier may be extended for good cause, including, but not limited to, adverse weather conditions delaying construction.

G105.3 Outdoor swimming pool

An outdoor swimming pool, including an in-ground, above-ground or on-ground, hot tub or spa shall be surrounded by a barrier which shall comply with the following:

1. The top barrier shall be at least 48 inches (1219mm) 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 (51mm) 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 above-ground 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 (102mm) 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 (1143mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1 ¾ inches (44mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ 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 (1143mm) or more, spacing between vertical members shall not exceed 4 inches (102mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches (44mm) in width.
6. Maximum mesh size for chain link fences shall be a 2 ¼ inch (57mm) square unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than 1 ¾ inches (44mm).
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 ¾ inches (44mm).
8. Gates shall comply with the requirements of Section AG105.2, Items 1 through 7, and with the following requirements:
 - 8.1. All gates shall be self-closing. In addition, if the gate is a pedestrian access gate, the gate shall open outward, away from the pool.

- 8.2. All gates shall be self-latching, with the latch handle located within the enclosure (ie on the pool side of the enclosure) and at least 40 inches (1016mm) above grade. In addition, if the latch handle is located less than 54 inches (1372mm) from the bottom of the gate, the latch handle shall be located at least 3 inches (76mm) below the top of the gate, and neither the gate nor the barrier shall have any opening greater than 0.5 inch (12.7mm) within 18 inches (457mm) of the latch handle.
- 8.3. All gates 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.
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 F 1346; or
 - 9.2. 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/or its screen, if present, are opened. The alarm shall be listed in accordance with UL2017. The audible alarm shall activate within 7 seconds and sound continuously for a minimum of 30 seconds after the door and/or its screen, if present, are 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 touch pad or switch, to temporarily deactivate the alarm for a single opening. Deactivation shall last for not more than 15 seconds. The deactivation switch(es) shall be located at least 54 inches (1372mm) above the threshold of the door; or
 - 9.3. Other means of protection, such as self-closing doors with self-latching devices, 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 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:
 - 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 Section AG105.2, 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 (102mm) sphere.

G105.4 Indoor Swimming Pool

Walls surrounding an indoor swimming pool shall comply with Section AG105.2, Item 9.

G105.5 Prohibited Locations

Barriers shall be located to prohibit permanent structures, equipment or similar objects from being used to climb them.

G105.6 Barriers Exceptions.

Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AG107, shall be exempt from the provisions of this appendix.

Section G106 Entrapment Protection for Swimming Pool and Spa Suction Outlets

G106.1 General

Suction outlets shall be designed to produce circulation throughout the pool or spa. Single-outlet systems, such as automatic vacuum cleaner systems, or multiple suction outlets, whether isolated by valves or otherwise, shall be protected against user entrapment.

G106.1.1 Compliance Alternative

Suction outlets may be designed and installed in accordance with ANSI/APSP-7.

G106.2 Suction Fittings

Pool and spa suction outlets shall have a cover that conforms to ANSI/ASME A112.19.8, or an 18 inch × 23 inch (457mm by 584 mm) drain grate or larger, or an approved channel drain system.

Exception: Surface skimmers

G106.3 Atmospheric Vacuum Relief System Required

Pool and spa single- or multiple-outlet circulation systems shall be equipped with atmospheric vacuum relief should grate covers located therein become missing or broken. This vacuum relief system shall include at least one approved or engineered method of the type specified herein, as follows:

1. Safety vacuum release system conforming to ASME A112.19.17; or
2. An approved gravity drainage system.

G106.4 Dual Drain Separation

Single or multiple pump circulation systems have a minimum of two suction outlets of the approved type. A minimum horizontal or vertical distance of 3 feet (914 mm) shall separate the outlets. These suction outlets shall be piped so that water is drawn through them simultaneously through a vacuum-relief-protected line to the pump or pumps.

G106.5 Pool Cleaner Fittings

Where provided, vacuum or pressure cleaner fitting(s) shall be located in an accessible position(s) at least 6 inches (152 mm) and not more than 12 inches (305 mm) below the minimum operational water level or as an attachment to the skimmer(s).

Section G107 Swimming Pool and Spa Alarms

G107.1 Applicability

A swimming pool or spa installed, constructed or substantially modified after December 14, 2006, shall be equipped with an approved pool alarm.

Exceptions:

1. A hot tub or spa equipped with a safety cover which complies with ASTM F1346, as listed in Section AG109.
2. A swimming pool (other than a hot tub or spa) equipped with an automatic power safety cover which complies with ASTM F1346, as listed in Section AG109.

Pool alarms shall comply with ASTM F2208, as listed in Section AG109, and shall be installed, used and maintained in accordance with the manufacturer's instructions and this section.

G107.2 Multiple Alarms

A pool alarm 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 provided.

G107.3 Alarm Activation

Pool alarms shall activate upon detecting entry into the water and shall sound poolside and inside the dwelling.

G107.4 Prohibited Alarms

The use of personal immersion alarms shall not be construed as compliance with this section.

Electrical Code Requirements

For Inflatable Temporary/Storable Swimming Pools

RE4107.1 Pumps. A cord and plug-connected pool filter pump for use with storable pools shall incorporate an approved system of double insulation or its equivalent and shall be provided with means for grounding only the internal and nonaccessible noncurrent-carrying metal parts of the appliance.

The means for grounding shall be an equipment grounding conductor run with the power-supply conductors in a flexible cord that is properly terminated in a grounding-type attachment plug having a fixed grounding contact.

RE4107.2 Ground-fault circuit-interrupters required. Electrical equipment, including power-supply cords, used with storable pools shall be protected by ground-fault circuit-interrupters.

Barrier/Fence Requirements

For Inflatable Temporary/Storable Swimming Pools

PM303.3 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 Section 303.3, 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 touch pad 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 Section 303.3, 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.

Barrier Requirements: Outdoor Residential Swimming Pools

An outdoor residential swimming pool must be provided with a barrier which completely surrounds the swimming pool and obstructs access to the swimming pool. The barrier may consist of a fence, a wall, a building wall, or any combination thereof.² The barrier must be at least 4 feet (48 inches) high, and must satisfy certain specified requirements (which are discussed in more detail below).

Access gates must satisfy the requirements applicable to barriers, as well as certain additional requirements (which are discussed in more detail below). In addition, access gates must 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.

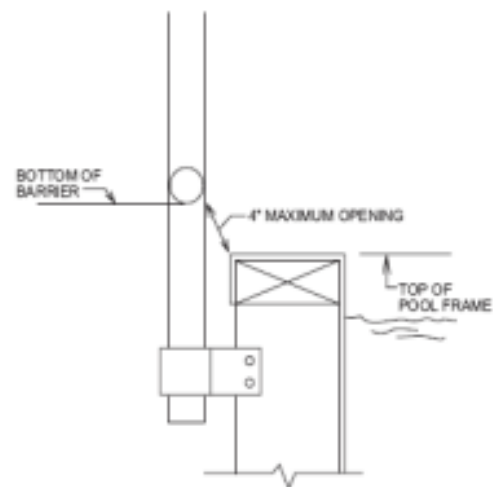
NOTE: In general, the barrier requirements discussed in this document apply to all swimming pools, without regard to the date of construction or installation of the pool.³

NOTE: As mentioned above, the definition of “swimming pool” includes hot tubs and spas. However, a hot tub or spa with a safety cover that complies with reference standard ASTM F 1346, entitled Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs, is exempt from the barrier requirements discussed here.

NOTE: The principal purpose of the Uniform Code’s barrier requirements is to make swimming pools inaccessible to young children. The specific requirements discussed below are intended to prevent a child from crawling under the barrier, fitting through the barrier, or climbing over the barrier. The requirements for access gates are intended to prevent a child from opening an access gate.

Barriers provided for outdoor residential swimming pools must satisfy the following requirements:

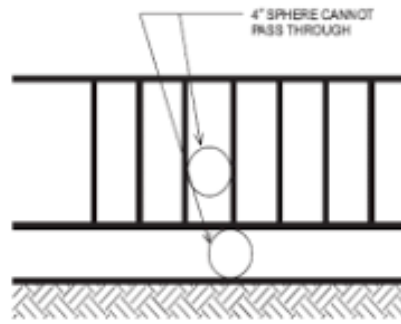
- The barrier must completely surround the swimming pool and must obstruct access to the swimming pool.
- The barrier must be at least 4 feet (48 inches) high.
- The space between the bottom of the barrier and the ground cannot exceed 2 inches.
- In the case of an above-ground pool, the barrier may be 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. See Figure 3109.4.1.
- Any opening in the barrier must be small enough to prevent the passage of a 4-inch diameter sphere through the opening. See Figure 3109.4.1.1.
- A barrier that does not have openings, such as a masonry or stone wall, cannot contain indentations or protrusions (except for normal construction tolerances and tooled masonry joints).



For SI: 1 inch = 25.4 mm.

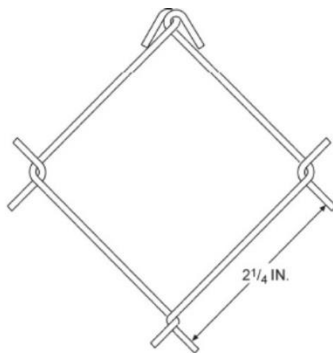
Figure 3109.4.1
OPENING LIMITATIONS

- 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 must be located on the swimming pool side of the fence;
 - the spacing between vertical members cannot exceed 1.75 inches; and
 - the spacing within any decorative cutouts in vertical members cannot exceed 1.75 inches. See Figure 3109.4.1.3.
- 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:
 - the spacing between vertical members cannot exceed 4 inches; and
 - the spacing within any decorative cutouts in vertical members cannot exceed 1.75 inches. See Figure 3109.4.1.3.



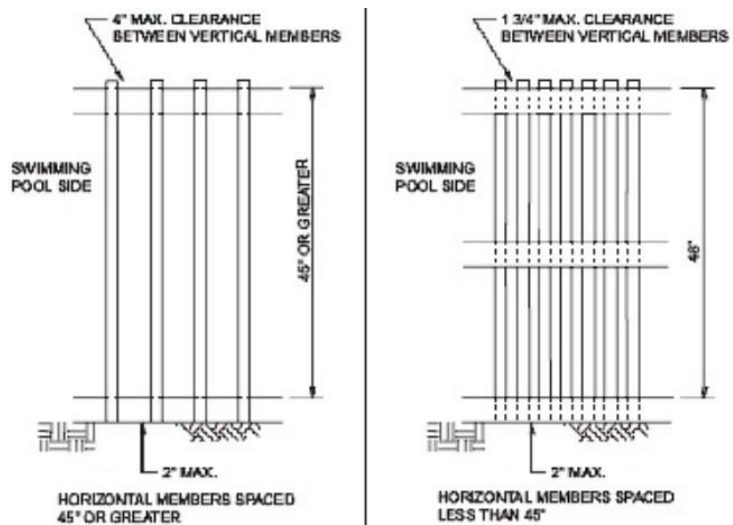
For SI: 1 inch = 25.4 mm.

Figure 3109.4.1.1
BARRIER OPENINGS



For SI: 1 inch = 25.4 mm.

Figure AG105.2(3)
CHAIN-LINK FENCE MESH FOR PRIVATE SWIMMING POOLS



For SI: 1 inch = 25.4 mm.

Figure 3109.4.1.3
PRIVATE SWIMMING POOL BARRIER CONSTRUCTION

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- If a chain link fence is used as the barrier, the mesh size cannot exceed 2.25-inch 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. See Figure 3109.4.1.6.
- Where the barrier is composed of diagonal members, such as a lattice fence, the opening formed by the diagonal members cannot exceed 1.75 inches.
- Access gates must satisfy the requirements stated above, and with the following additional requirements:
 - All gates must be self-closing.

- In addition, if the gate is a pedestrian access gate, the gate must open outward, away from the pool.
 - All gates shall be self-latching, with the latch handle located within the enclosure (i.e, on the pool side of the enclosure) and at least 40 inches (1016 mm) above grade.
 - In addition, if the latch handle is located less than 54 inches (1372 mm) from the bottom of the gate, the latch handle shall be located at least 3 inches (76 mm) below the top of the gate, and neither the gate nor the barrier shall have any opening greater than 0.5 inch (12.7 mm) within 18 inches (457 mm) of the latch handle.
 - All gates 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.
- 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 in compliance with reference standard ASTM F1346, entitled Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs; or
 - all doors with direct access to the pool through that wall must be equipped with an alarm which:
 - produces an audible warning when the door and its screen, if present, are opened,
 - sounds continuously for a minimum of 30 seconds immediately after the door is opened,
 - is capable of being heard throughout the house during normal household activities,
 - automatically resets under all conditions, and
 - is equipped with a manual means, such as touchpad or switch, to deactivate the alarm temporarily for a single opening (such deactivation cannot last for more than 15 seconds, and the deactivation switch[es] must be located at least 54 inches above the threshold of the door); or
 - other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body and which afford a degree of protection not less than the protection afforded by the powered safety cover and door alarm described above, must be provided.
- 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 complying swimming pool 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.

Barrier Requirements: Indoor Residential Swimming Pools

All walls surrounding an indoor residential swimming pool must comply with the above-stated requirements for building walls used as all or part of a barrier around an outdoor residential swimming pool. ⁴

Barrier Requirements: Public Swimming Pools

A public swimming pool must be completely enclosed by a fence at least 4 feet in height or a screen enclosure. Openings in the fence must not permit the passage of a 4-inch diameter sphere. The fence or screen enclosure must be equipped with self-closing and self-latching gates.⁵

See also Section 302.7.2.1 of the *Property Maintenance Code of New York State*, which provides that an approved enclosure, at least 4 feet in height, must be provided around outdoor swimming pools, so that such pools are inaccessible to children. The enclosure may surround either the pool area or the property.

NOTE: The State Sanitary Code (10 NYCRR Chapter 1) is a regulation promulgated by the New York State Department of Health. Subpart 6-1 of the State Sanitary Code applies to all swimming pools except:

- a swimming pool “owned and/or maintained by an individual for the use of his family and friends;
- spa pools used under medical supervision or associated with hospitals; and
- float tank or relaxation tank used for solitary body immersion in skin-temperature salt water.”

Therefore, Subpart 6-1 applies to most “public” swimming pools. If a swimming pool is subject to the provisions of Subpart 6-1 of the State Sanitary Code, then:

- The pool must be enclosed within a fence or other barrier, at least four feet high, which can only be entered by bathers through self-closing and positive self-latching doors or gates;
- the knob or handle controlling the latch must be at least 40 inches above grade;
- the gate or door must be locked, and access to pool prevented, when the pool is not supervised;
- swimming pool fences constructed after the effective date of Subpart 6-1 (March 30, 1988) must meet the requirements of the Uniform Code; and
- in the case of a swimming pool fence constructed prior to March 30, 1988, no opening shall exceed four inches.

Temporary Pool Enclosures⁶

During the installation or construction of a swimming pool, the swimming pool must be enclosed by a temporary enclosure. The temporary enclosure may consist of a temporary fence, a permanent fence, the wall of a permanent structure, any other structure, or any combination of the foregoing. However:

- all portions of the temporary enclosure must be at least four (4) feet high, and
- all components of the temporary enclosure must be sufficient to prevent access to the swimming pool by any person not engaged in the installation or construction process and to provide for the safety of all such persons.

The temporary enclosure must remain in place throughout the period of installation or construction of the swimming pool, and thereafter until the installation or construction of a permanent enclosure has been completed. The temporary enclosure must be replaced by a permanent enclosure. The permanent enclosure must comply with all applicable “Barrier Requirements” described at pages 2 to 7 of this publication, and with any additional requirements that may be imposed by any other New York State codes or regulations applicable to swimming pool enclosures or by any local law applicable to swimming pool enclosures and in effect in the location where the swimming pool has been installed or constructed.

The permanent enclosure must be completed within ninety days after the date of issuance of the building permit for the installation or construction of the swimming pool, or the date of commencement of the installation or construction of the swimming pool, whichever is later. (If the swimming pool is installed or constructed without the issuance of a building permit, the permanent enclosure must be completed within ninety days after the date of commencement of the installation or construction of the swimming pool - note, however, that this provision does not permit the installation or construction of a pool without a building permit where such a permit is required by applicable law.) The local code enforcement official has authority to extend the 90 day period for completion of the permanent enclosure for good cause, such as a delay in construction caused by bad weather.

Pool Alarm Requirements ⁷

Every swimming pool that is installed, constructed or substantially modified after December 14, 2006 must be equipped with an approved pool alarm which:

- is capable of detecting a child entering the water and giving an audible alarm when it detects a child entering the water;
- is audible poolside and at another location on the premises where the swimming pool is located;
- is installed, used and maintained in accordance with the manufacturer's instructions;
- is classified to reference standard ASTM F2208, entitled *Standard Specification for Pool Alarms* (either the version adopted in 2002 and editorially corrected in June 2005, or the version adopted in 2007); and
- 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.

A pool alarm 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 must be installed.

Pool alarms are not required in:

- a hot tub or spa equipped with a safety cover classified to reference standard ASTM F1346 (2003), entitled *Standard Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas and Hot Tubs*, or
- any swimming pool (other than a hot tub or spa) equipped with an automatic power safety cover classified by to reference standard ASTM F1346 (2003).

Entrapment Protection Requirements ⁸

- Suction outlets must be designed to produce circulation throughout the pool or spa.
- Single outlet systems, such as automatic vacuum cleaner systems, or other such multiple suction outlets whether isolated by valves or otherwise must be protected against user entrapment.
- All pool and spa suction outlets (except surface skimmers) must be provided with:
 - a cover that conforms with reference standard ASME/ANSI A112.19.8M, entitled *Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances*, or
 - a drain gate that is 12" × 12" or larger, or
 - a channel drain system approved by the local code enforcement official.

- All pool and spa single or multiple outlet circulation systems must be equipped with atmospheric vacuum relief should grate covers located therein become missing or broken. Such vacuum relief systems shall include at least one the following:
 - safety vacuum release system conforming to reference standard ASME A112.19.17, entitled *Manufacturers Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub and Wading Pool*, or
 - a gravity drainage system approved by the local code enforcement official.
- Single or multiple pump circulation systems must be provided with a minimum of two (2) suction outlets of the approved type.
- The suction outlets must be separated by a minimum horizontal or vertical distance of three (3) feet.
- These suction outlets must be piped so that water is drawn through them simultaneously through a vacuum relief-protected line to the pump or pumps.
- If the pool or spa is equipped with vacuum or pressure cleaner fitting(s), each fitting must be located:
 - in an accessible position which is at least six (6) inches and not greater than twelve (12) inches below the minimum operational water level, or
 - as an attachment to the skimmer(s).

Design and Construction Requirements

In-ground pools must be designed and constructed in conformance with reference standard ANSI/NSPI-5, entitled *Standard for Residential In-ground Swimming Pools*.⁹

Above-ground and on-ground pools must be designed and constructed in conformance with reference standard ANSI/NSPI-4, entitled *Standard for Above-ground/On-ground Residential Swimming Pools*.¹⁰

NOTE: A “public” swimming pool that is subject to Subpart 6-1 of the State Sanitary Code must comply with the design standards and construction provisions of Subpart 6-1.

Maintenance Requirements

The *Property Maintenance Code of New York State* provides that swimming pools must be maintained in a clean and sanitary condition, and in good repair.¹¹

NOTE: A “public” swimming pool that is subject to Subpart 6-1 of the State Sanitary Code must comply with the operation, supervision and maintenance provisions of Subpart 6-1.

Other Requirements

Many other technical requirements are covered by the Uniform Code:

- Safety glazing material is required in the walls and fences enclosing indoor and outdoor swimming pools where certain conditions are met. See *Building Code of New York State* Section 2406.2.9.
- Support provisions for membrane structures: see *Building Code of New York State* Section 3102.8.3.
- Recirculation of supply air to a swimming pool and associated deck areas: see *Mechanical Code of New York State* Section 403.2.1.2.
- Regulation of solar heating systems: see *Mechanical Code of New York State* Section 1401.

- Swimming pools shall be protected against backflow in accordance with *Plumbing Code of New York State Section 608*. See *Plumbing Code of New York State Section 423.1*.
- Where waste water from swimming pools, backflow from filters and water from pool deck drains discharge to the building drainage system, the discharge must be through an indirect waste pipe via an air gap. See *Plumbing Code of New York State Section 802.1.4*.
- Suction fittings for use in swimming pools shall comply with reference standard ASME/ANSI A112.19.8M, entitled *Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, Hot Tubs, and Whirlpool Bathtub Appliances*. See *Residential Code of New York State Section 2701.1*.
- The installation of electric wiring and equipment associated with swimming pools, wading pools, hot tubs and spas, and hydromassage bathtubs, whether permanently installed or storable, and metallic auxiliary equipment, such as pumps, filters and similar equipment, are subject to the provisions of Chapter 41 of the *Residential Code of New York State*. For example:
 - Section 4102 contains requirements for wiring methods.
 - Section 4103 contains requirements for equipment locations and clearances.
 - Section 4104 contains requirements for the bonding of metallic parts, and permitted methods of bonding.
 - Section 4105 contains requirements for the grounding of equipment.
 - Section 4106 contains requirements for the installation of equipment.
 - Section 4107 contains special provisions for storable swimming pools.
 - Section 4108 contains special provisions for spas and hot tubs.
 - Section 4109 contains special provisions for hydromassage bathtubs.

State Energy Conservation Construction Code

The *State Energy Conservation Construction Code of New York State* (Energy Code) is promulgated by the Code Council pursuant to Article 11 of the Energy Law. The Energy Code is included provisions in Part 1240 of Title 19 of the NYCRR and in the publication mentioned in that Part. That publication is the *Energy Conservation Construction Code of New York State*.

Energy conservation requirements for residential and commercial swimming pools can be found in Chapters 4 and 5 of the Energy Code.

ENDNOTES

1. See 19 NYCRR Sections 1220.1(d)(7), 1221.1(d)(2), 1222.1(c)(1), 1228.2(b)(4), and 1228.4(b)(3).
2. See *Residential Code of New York State*, Appendix G, Section 105.2 and the definitions in *Residential Code of New York State*, Appendix G, Section 102.1. See also *Property Maintenance Code of New York State* Section 302.7.2.1, which provides that an approved enclosure, at least 4 feet in height, must be provided around outdoor swimming pools, so that such pools are inaccessible to children.
3. See *Tarquini v. Town of Aurora*, 77 N.Y.2d 354 (1991).
4. See *Residential Code of New York State*, Appendix G, Section 105.3.
5. See *Building Code of New York State* Section 3109.3.
6. See 19 NYCRR, Part 1228, Section 1228.4.
7. See 19 NYCRR, Part 1228, Section 1228.2.
8. See *Residential Code of New York State*, Appendix G, Section 106.
9. See *Residential Code of New York State*, Appendix G, Section 103.1.
10. See *Residential Code of New York State*, Appendix G, Section 103.2.
11. See *Property Maintenance Code of New York State* Section 302.7.2