

SECTION 3109 SWIMMING POOL ENCLOSURES AND SAFETY DEVICES

3109.1 General. Swimming pools shall comply with the requirements of this section and other applicable sections of this code. The requirements of this section and of the other applicable sections of this code shall be in addition to, and not in replacement of or substitution for, the requirements of other applicable federal, state and local laws and regulations, including, but not necessarily limited to, (a) the requirements of Subpart 6-1 (Swimming pools) of Title 10 of the Official Compilation of Codes, Rules and Regulations of the State of New York (NYCRR), where applicable, and (b) the requirements of section 8003 (Federal swimming pool and spa drain cover standard) of Title 15 of the United States Code, where applicable.

3109.2 Definitions. The following words and terms shall, for the purposes of this section, and as used elsewhere in this code, have the meanings shown herein.

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.

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

SWIMMING POOLS. Any structure, basin, chamber or tank which is intended for swimming, diving, recreational bathing or wading and which contains, is designated 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.

3109.3 Public swimming pools. Public swimming pools shall be completely enclosed by a fence at least 4 feet (1290 mm) in height or a screen enclosure. Openings in the fence shall not permit the passage of a 4-inch-diameter (102 mm) sphere. The fence or screen enclosure shall be equipped with gates.

3109.3.1 Gates. Gates shall comply with the following requirements.

3109.3.1.1 Self-closing; opening configuration. 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.

3109.3.1.2 Self-latching; location of latch handle. 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 barrier shall have any opening greater than 0.5 inch (12.7) within 18 inches (457 mm) of the latch handle.

3109.3.1.3 Locking. 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.

3109.4 Residential swimming pools. Residential swimming pools shall comply with Sections 3109.4.1 through 3109.4.3.

Exception: A swimming pool with a power safety cover or a spa with a safety cover complying with ASTM F1346

3109.4.1 Barrier height and clearances. The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier that 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 that faces away from the swimming pool. Where the top of the pool structure is above grade, the barrier is authorized to be at ground level or mounted on top of the pool structure, and the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

3109.4.1 Barrier height and clearances. The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier that 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 that faces away from the swimming pool. Where the top of the pool structure is above grade, the barrier is authorized to be at ground level or mounted on top of the pool structure, and the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

3109.4.1.1 Openings. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

3109.4.1.2 Solid barrier surfaces. Solid barriers which do not have openings shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

3109.4.1.3 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 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.

3109.4.1.4 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, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

3109.4.1.5 Chain link dimensions. Maximum mesh size for chain link fences shall be a 2.25 inch square (57 mm square) unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to no more than 1.75 inches (44 mm).

3109.4.1.6 Diagonal members. Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be no more than 1.75 inches (44 mm).

3109.4.1.7 Gates. Gates shall comply with the requirements of Sections 3109.4.1.1 through 3109.4.1.6 and with the following requirements.

3109.4.1.7.1 Self-closing; opening configuration. 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.

3109.4.1.7.2 Self-latching; location of latch handle. 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 barrier shall have any opening greater than 0.5 inch (12.7) within 18 inches (457 mm) of the latch handle.

3109.4.1.7.3 Locking. 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.

3109.4.1.8 Dwelling wall as a barrier. Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017. 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 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. In dwellings not required to be Accessible, Type A or Type B units, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings required to be Accessible, Type A or Type B units, the deactivation switch(es) shall be located at 54 inches (1372 mm) maximum and 48 inches minimum above the threshold of the door.
2. The pool shall be equipped with a power safety cover that complies with ASTM F 1346.
3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the administrative authority, shall be accepted so long as the degree of protection afforded is not less than the protection afforded by Section 3109.4.1.8, Item 1 or 2.

3109.4.1.9 Pool structure as barrier. 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 the ladder or steps either shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier which meets the requirements of Sections 3109.4.1.1 through 3109.4.1.8. 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.

3109.4.2 Indoor swimming pools. Walls surrounding indoor swimming pools shall not be required to comply with Section 3109.4.1.8.

3109.4.3 Prohibited locations. Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers.

3109.5 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 fence in compliance with Section 3109.3 is provided for public swimming pools, or a barrier in compliance with Section 3109.4 is provided for residential pools.

Exceptions:

1. Above-ground or on-ground residential swimming pools where the pool structure is the barrier in compliance with Section 3109.4.1.9.

2. Spas or hot tubs with a safety cover which complies with ASTM F 1346, 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.

3109.5.1 Height. The top of the temporary barrier shall be at least 48 inches (1219) above grade measured on the side of the barrier which faces away from the swimming pool.

3109.5.2 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.

3109.5.2.1 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.

3109.6 Entrapment protection. Entrapment protection shall be provided in compliance with Section 3109.6.1 or 3109.6.2.

3109.6.1 Suction entrapment avoidance. Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

3109.6.2 Entrapment avoidance. Suction outlets shall be designed to protect the pool user against entrapment. The term "main drain" means a submerged suction outlet typically located at the bottom of a pool or spa to conduct water to a recirculating pump. The term "unblockable drain" means a drain of any size and shape that a human body cannot sufficiently block to create a suction entrapment hazard such as an 18 inch by 23 inch (457 mm by 584 mm) drain grate or larger, or an approved long channel drain.

3109.6.2.1 Suction fittings. All pool and spa suction outlets shall be provided with a cover that conforms to ASME A112.19.8.

3109.6.2.2 Anti-entrapment devices or systems. Pools with a single main drain other than an unblockable drain shall be equipped with one or more of the following devices or systems designed to prevent entrapment by pool drains.

1. Safety vacuum release system. A safety vacuum release system, capable of providing vacuum release at a suction outlet caused by a high vacuum occurrence

due to a suction outlet flow blockage, that ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected and has been determined to comply with ASME/ANSI A112.19.17 or ASTM F2387 by an accredited independent testing laboratory.

2. Suction-limiting vent system. A suction-limiting vent system with a tamper-resistant atmospheric opening.

3. Gravity drainage system. A gravity drainage system that utilizes a collector tank.

4. Automatic pump shut-off system. An automatic pump shut-off system.

5. Drain disablement. A device or system that disables the drain.

6. Other systems. Any approved system determined to be equally effective as, or better than, the systems described in Section 3109.6 at preventing or eliminating the risk of injury or death associated with pool drainage systems.

3109.6.2.3 Multiple main drains. When two or more main drains are installed, a minimum of two suction outlets per pump with drain cover centers at least 3 feet apart must be provided. If the minimum spacing distance or two suction per pump requirement cannot be met, the drain shall be considered a single main drain.

3109.7 Swimming Pool and Spa Alarms

3109.7.1 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 F 1346.
2. A swimming pool (other than a hot tub or spa) equipped with an automatic power safety cover which complies with ASTM F 1346.

Pool alarms shall comply with ASTM F 2208 and shall be installed, used and maintained in accordance with the manufacturer's instructions and this section.

3109.7.2 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.

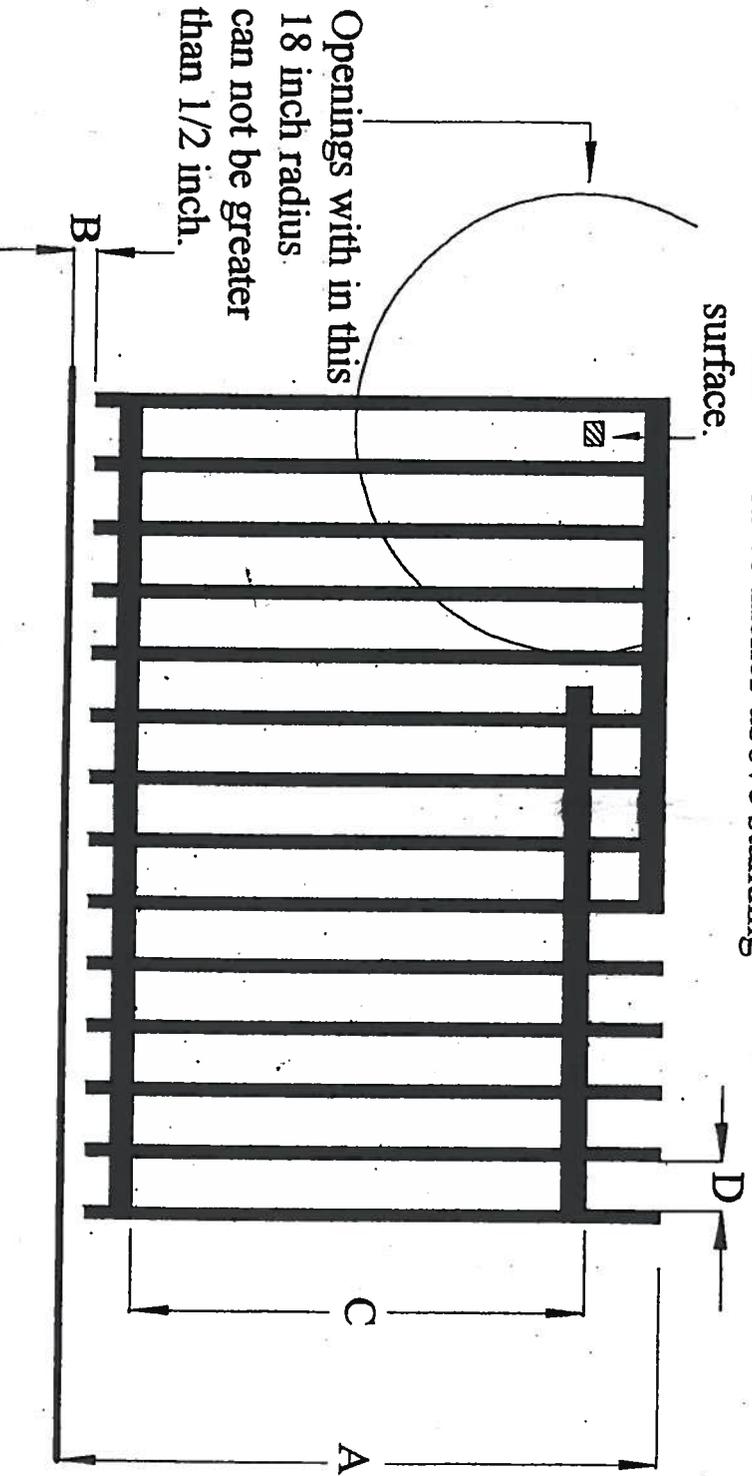
3109.7.3 Alarm activation. Pool alarms shall activate upon detecting entry into the water and shall sound poolside and inside the building.

3109.7.4 Prohibited alarms. The use of personal immersion alarms shall not be construed as compliance with this section.

Pool Barrier Gate Example,

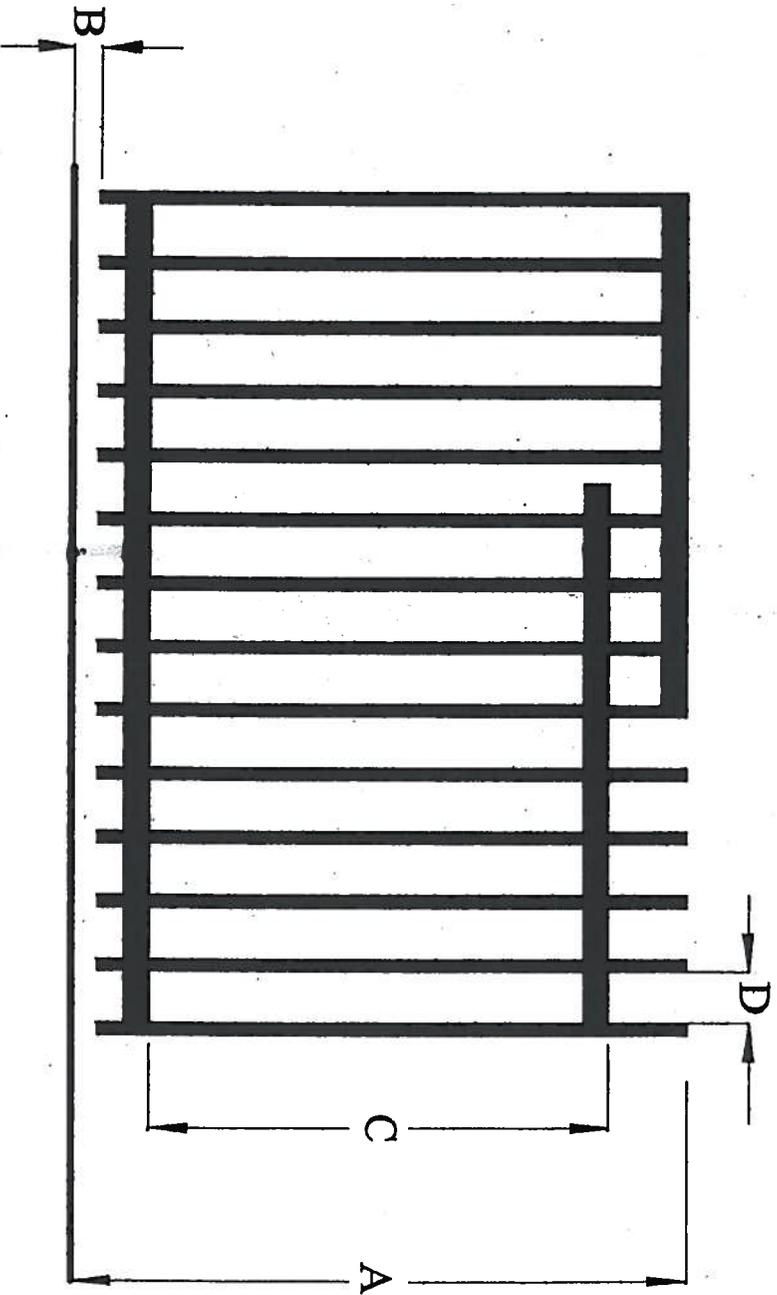
with latch release less than 54 inches above a standing surface and located on the pool side.

Latch release located a minimal of 3 inches below the top of gate and a minimal of 40 inches above standing surface.



Dimension "A" must be 48 inches minimum from a standing surface to the top of gate. Dimension "B" may be 2 inches maximum from standing surface to the bottom of gate. If dimension "C" is less than 45 inches, dimension "D" cannot be greater than 1-3/4 inches. Dimension "D" can never be greater than 4 inches.

Pool Barrier Fence Example



Dimension "A" must be 48 inches minimum from a standing surface to the top of gate.

Dimension "B" may be 2 inches maximum from standing surface to the bottom of gate.

If dimension "C" is less than 45 inches, dimension "D" cannot be greater than 1-3/4 inches.

Dimension "D" can never be greater than 4 inches.

PERMANENTLY INSTALLED SWIMMING POOLS ELECTRICAL WIRING REQUIREMENTS

2008 National Electrical Code / 2010 Residential Code of New York State
www.InspectNY.com/codes

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 twist-lock outlet, grounded, and Ground Fault Circuit Interrupter (GFCI) protected.
- b. Receptacle must have a weatherproof cover that can be closed when the cord is plugged in. (In-use type cover)
- c. An Automatic Timer (Time Switch) must be installed on swimming pool pumps.
- d. 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.
- e. Wire for the pump motor shall not be less than #12 AWG insulated copper grounded wire, and must be in conduit. (except when entering a building the wire can change to NM) (Cannot use NM wire in conduit)
- f. 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.
- c. Must have a weatherproof cover where exposed to the weather (In-use type cover required on used, unattended, receptacles in 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 conduit* must be buried at least 18" deep (12" if GFCI protected)
 - iii. Metal – All Rigid Metal Conduit* must be at least 6" deep

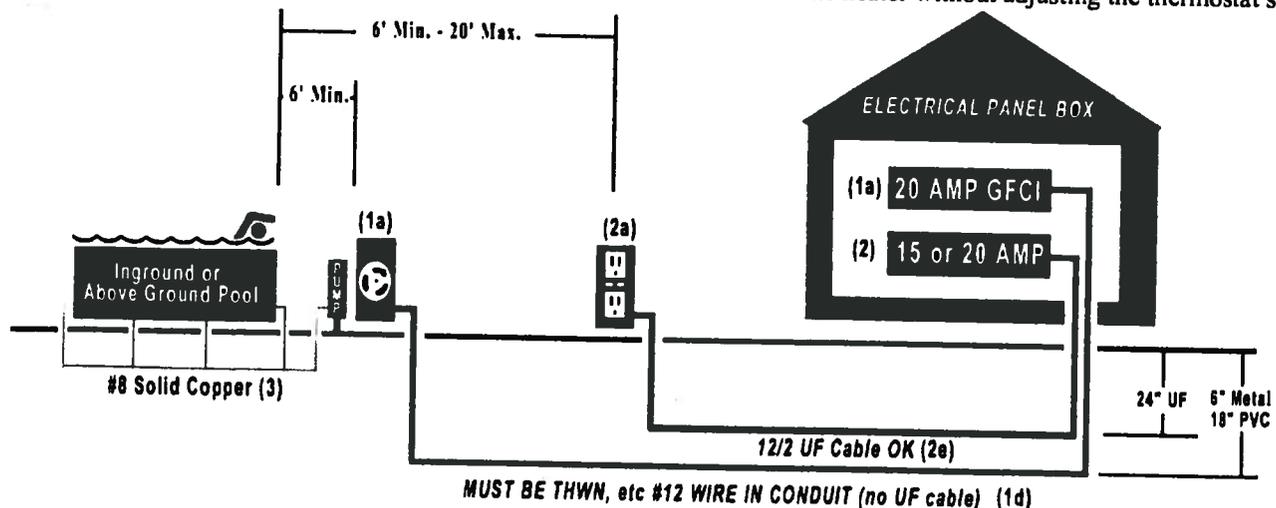
* Wires used in conduit must be single strand wires (ex: THWN, etc - NO NM or UF CABLE in Conduit)

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 metal must be in the water to bond the water

4) Other

- a. Building Permits are required. Secure a Building Permit prior to beginning work from your municipality
- b. Pool Alarms are required (Check with your local Building Department for additional information)
- c. If a Pool Heater is present, an Automatic Timer (Time Switch) must be installed on the pool heater and must be equipped with a readily accessible on-off switch to shut off the heater without adjusting the thermostat setting.



PLEASE CONTACT YOUR LOCAL INSPECTOR IF YOU HAVE ANY QUESTIONS

FOR ELECTRICAL INSPECTIONS CALL:

Middle Department Inspection

Inspectors for the Town of Webster

George Sharlow 454-5191

John McLaughlin 787-6968

Commonwealth Electrical Inspection Services

Inspectors for the Town of Webster

Mike Shumway 367-2779

Robert Caruso 748-8746

Fritz Gunther 230-4186

Tony Alello 261-6365

Pre-inspection check list

Complete / review this list before calling for an inspection.

1. Have building permit available we may need permit number and or may have to sign permit. Varies with local municipality.
2. Pool pump: ___ Twist lock plug for pool pump if between 5 and 10 feet from waters edge. ___ Can be no closer than 5 feet from water. ___ Water tight bubble cover. ___ Pump cord 12 gauge wire no longer than 3 feet with water tight connector at pump.
3. ___ Convenience receptacle located between 10 and 20 feet. GFCI protected with bubble style cover.
4. ___ Ditch open in a few spots ___ 12 inches deep if GFCI protected wires. ___ 18 inches if not. ___ PVC conduit with 3(Black, White, Green) #12 gauge THWN wires for pool pump. ___ UF wire ok for Convenience receptacle.
5. ___ All metal parts bonded to pump with #8 solid wire. NO GROUND RODS!! Wire should go half way around metal pools. Resin pools often require no bonding.
6. ___ All existing receptacles within 20 feet of pool must be GFCI protected.
7. ___ All ground wires must be mechanically fastened in junction boxes with wire nuts or other approved fasteners. ___ Metal boxes must be bonded to grounding wires.
8. ___ If a breaker is used make sure it is a Ground fault GFCI not Arc Fault AFCI.
9. Town will look for pool alarm and fence.

TOWN OF WEBSTER BUILDING DEPARTMENT
Swimming Pool/Spa Supplement to Building Permit Application

- As **HOMEOWNER**, I have applied for a building permit for an:
 above ground pool in-ground pool hot tub/spa

- I acknowledge that I am responsible for the:
 fence enclosure electrical (including inspection)

- I acknowledge that I am responsible for the **final inspection** and will schedule this by calling Town of Webster Building Dept. at 872-7036.

- As **CONTRACTOR**, I have applied for a building permit for an:
 above ground pool in-ground pool hot tub/spa

- I acknowledge that I am responsible for the:
 fence enclosure electrical (including inspection)

I further understand that the pool/hot tub/spa **MAY NOT BE USED UNTIL ALL INSPECTIONS ARE MADE AND A CERTIFICATE OF COMPLIANCE HAS BEEN ISSUED BY THE TOWN.**

CHECK APPROPRIATE BOX:

IN-GROUND POOL - A fence/enclosure plan must be submitted before a building permit is issued for in-ground pools. Existing site drainage can't be altered and grading will be part of the final inspection. (Plan shall include height, location of self-closing/self-latching gate(s), sliding door locations, and deck/deck access, etc.) The homeowner must sign the plan.

ABOVE GROUND POOL - A fence/enclosure plan must be submitted for an above ground pool with attached deck or if deck is attached to a house or if any excavation work is to be done to provide level ground for the pool. Existing site drainage can't be altered and grading will be part of the final inspection. (Plan shall include height, location of self-closing/self-latching gates, sliding door locations and deck/deck access, etc.) The homeowner must sign the plan.

HOT TUB/SPA - An electrical inspection is required. A lockable cover is required.

I have reviewed the above information and received a copy of the Town of Webster Code for pools and fences.

_____ *Signature*

_____ *Date*

Name: _____

Address: _____

Tel.: _____

(For Town Use Only) Building Permit No.: _____