

# Installation Requirements for Swimming Pools and Hot tubs



With the beginning of the hot days of summer, the installation of new swimming pools and the opening of existing pools begin. This is a time that we should turn our attention to the safety of our children.

The New York State Building Codes and our local Zoning Codes have a number of requirements to protect our children from accidents around the pool. By definition, any pool

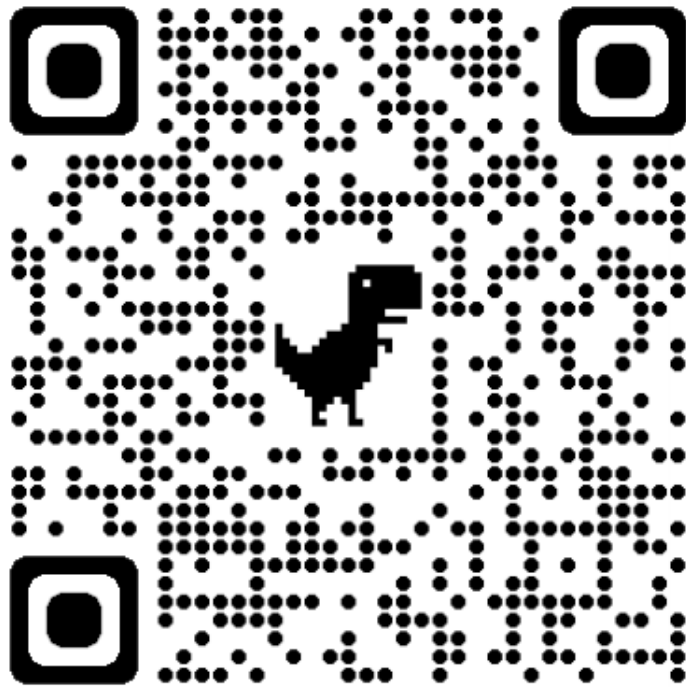
with a designed water depth of more than 24 inches requires a Building Permit for pool installation. This includes the soft sided inflatable pools which are put up in the spring and taken down in the fall. A primary concern with pools is the barrier requirements. All pools or other structures intended for swimming or recreational use are required to have a barrier of at least 48 inches above grade and this barrier must be rigid. Above ground pools which are at least 48 inches above grade may meet this barrier requirement; however, the inflatable pools do not meet this requirement even if the walls are 48 inches high as the walls of the pool are not rigid. In-ground pools are required to be fully fenced with a minimum fence height of 48 inches. In addition, all access areas to the pool must be secured; ladders to above ground pools must either be foldable or removable to prevent access to the pool and all gates through fences for in ground pools and access to pool decks must be self-closing and have child proof latches. If a house is part of the pool barrier all doors with direct access to the pool must be alarmed.

In addition to the above barrier requirements, in December 2006, New York State adopted a new rule which required that all new pool installations or pools which undergo significant repairs must be equipped with a pool alarm that meets the standards of ASTM 2208. Some of the requirements of this standard are an audible poolside alarm and a remote alarm location (on the premises where the pool is located) the alarm requires a manual reset and cannot be adjusted or turned off. Prices for the alarms range from \$100.00 to \$200.00 and more.

There are a number of other specific requirements, including electrical, for the installation of pools. Pool information packages are available at the office for anyone to pick up.

Please work with your Code Enforcement Officer to help ensure that your pool is a safe pool.

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**QR Code for 2020 Residential Code of New York State:**

### **Chapter 42 Swimming Pools**

ICC user note:

About this chapter: Chapter 42 addresses all aspects of wiring, fixtures, motors and electrical accessories for swimming pools, wading pools, hot tubs, spas and hydromassage bathtubs.

This chapter focuses on protection of occupants from electrical shock. The dangers of using electricity around water, wet surfaces, grounded surfaces and [plumbing](#) are well known, and this chapter is intended to minimize or eliminate those hazards.

## YATES ZONING- SECTION 680 SWIMMING POOLS

Swimming pools may be installed only as accessory structures to a dwelling for the private use of the owners or occupants of such dwelling and their families and guests. No swimming pool shall be installed or maintained unless:

- A. Such pools are installed in the rear or side yard of the premises, unless hardship is shown. No swimming pool shall be closer to the street or front lot line than the front of the building or structure to which the pool is an accessory use.
- B. The setbacks from the side and rear lot lines shall be at least 15 feet.
- C. Anything in this Local Law to the contrary notwithstanding, for inground pools, there shall be erected and maintained a good quality fence to be a minimum of four feet in height, enclosing the entire portion of the premises upon which such pool shall be installed and entirely surrounding the area in which such pool is located.
- D. Fences and gates shall be required, pursuant to the requirements of the Codes of New York State. Every gate or other opening in the fence enclosing any pool, except an opening through the dwelling or other main building of the premises, shall be kept securely closed and locked at all times when the owner or occupant of the premises is not present at such pool.
- E. No permit shall be issued for such pool unless the applicant can show that the proposed drainage of such pool is adequate and will not interfere with the property of others, with public highways or area drainage facilities.
- F. No permit shall be issued for such pool unless the applicant can demonstrate that there is sufficient water supply to accommodate such pool without detriment to normal water consumption requirements and that all proposed water connections are proper and adequate.
- G. Zoning permits shall be required for all swimming pools having an area greater than 100 square feet or a depth greater than 18 inches regardless of whether the pool is above or below ground.
- H. This section does not apply to farm ponds or other natural or artificial made bodies of water located in on residential areas.

# HOT TUBS & SPAS - ELECTRICAL WIRING REQUIREMENTS

## 2017 National Electrical Code Requirements

### NEW YORK ELECTRICAL INSPECTION AGENCY

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**SPA OR HOT TUB.** A HYDROMASSAGE POOL, OR TUB FOR RECREATIONAL OR THERAPEUTIC USE, NOT LOCATED IN HEALTH CARE FACILITIES, DESIGNED FOR IMMERSION OF USERS, AND USUALLY HAVING A FILTER, HEATER, AND MOTOR-DRIVEN BLOWER. THEY ARE INSTALLED INDOORS OR OUTDOORS, ON THE GROUND OR SUPPORTING STRUCTURE, OR IN THE GROUND OR SUPPORTING STRUCTURE. GENERALLY, A SPA OR HOT TUB IS NOT DESIGNED OR INTENDED TO HAVE ITS CONTENTS DRAINED OR DISCHARGED AFTER EACH USE.

#### 1) Hot Tub / Spa Wiring Method and Receptacles (Outlets)

- Maintenance Disconnect - A disconnect is required for all ungrounded electrical wires (except for lighting). It must be at least 5' horizontally but not more than 50' from the water's edge, readily accessible, and within sight of the Hot Tub / Spa.
- The outlet(s) that supply a Hot Tub / Spa must be Ground-Fault Circuit Interrupter (GFCI) protected.
- Indoor Hot Tubs & Spas
  - At least one (1) convenience receptacle must be located between 6' and 10' from the inside wall of the Hot Tub / Spa and be GFCI Protected (Existing receptacle OK and wired with any approved wiring method).
- Outdoor Hot Tubs & Spas
  - At least one (1) 15- or 20-amp convenience receptacle must be located between 6' and 20' from the inside wall of the Hot Tub / Spa and be GFCI Protected (Existing receptacle OK and wired with any approved wiring method).
  - Liquidtight flexible nonmetallic or metallic conduit is permitted in any lengths.
  - A listed packaged hot tub / spa installed outdoors that is GFCI protected shall be permitted to be cord and plug-connected provided that such cord does not exceed 15 feet in length.
  - Outdoor receptacles must have an in-use weatherproof cover rated "extra-duty" where exposed to the weather.

#### 2) Bonding The Hot Tub / Spa

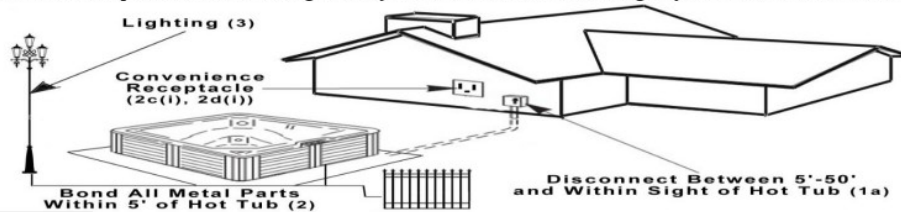
- All metal parts & surfaces within 5' of the Hot Tub / Spa must be bonded together using a #8 (or larger) solid copper wire and connections must be listed and non-corrosive. Indoor Hot Tubs / Spas must bond all metal within or attached to the hot tub.
- Outdoor Hot Tubs / Spas with nonconductive shells must have a #8 (or larger) solid, bare copper wire 18"-24" from the inside hot tub wall under the perimeter surface 4"-6" below the final grade and connected to a metal part of the pump motor.\*  
\* Exception: All must apply; 1) Hot tub must be listed for aboveground use, 2) Listed for outdoor use, 3) Installed on or aboveground, 4) The top rim of the hot tub must be at least 28" above the perimeter surfaces within 30" horizontally.

#### 3) Lighting (other than underwater applications) (if any)

- All non-GFCI protected lights and ceiling fans within 5' of the inside wall of the Hot Tub / Spa must be at least 12' above the maximum water level of the Hot Tub / Spa.
- All GFCI protected lights and ceiling fans within 5' of the inside wall of the Hot Tub / Spa must be at least 7 1/2' above the maximum water level of the Hot Tub / Spa.
- Exception - Lights that are within 5' of the inside wall of the Hot Tub / Spa and less than 7 1/2' above the water level are only acceptable if they meet the following:
  - Recessed Lights - GFCI protected with a glass or plastic lens, nonmetallic or electrically isolated metal trim, and suitable for damp locations.
  - Surface-Mounted Lights - GFCI protected with a glass or plastic globe, a nonmetallic body, or a metallic body isolated from contact, and suitable for damp locations.

#### 4) Other

- Building Permits are required. Always secure a Building Permit from your municipality prior to beginning work.
- Indoor Hot Tubs / Spas wall switches must be a minimum 5' from the inside wall of the Hot Tub / Spa.
- Outdoor Hot Tubs check for overhead wires within 10' of the Hot Tub. (Must be 22 1/2' above water level & not allowed in many towns)
- All Hot Tubs / Spas, other than in a single-family residence, must have an emergency shutoff between 5'-50' & within sight.



PLEASE CONTACT YOUR LOCAL INSPECTOR IF YOU HAVE ANY QUESTIONS  
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# STORABLE SWIMMING POOLS, SPAS, & HOT TUBS

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**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 IN., 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.)

### 1) 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.

### 2) Receptacle (Outlet) and Wiring Method for Storable Pool Pump

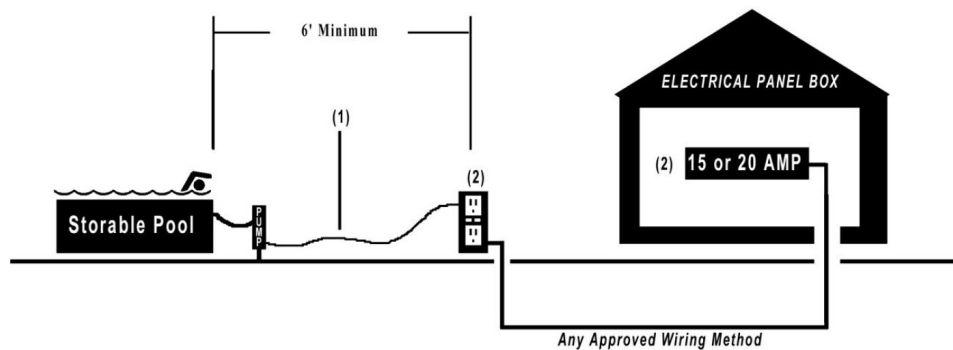
- Any receptacle, existing or new, cannot be located closer than 6' of the inside wall of the storable pool.
- The receptacle must be grounded, must be Ground Fault Circuit Interrupter (GFCI) protected, and the Tamper Resistant (TR), and Weather Resistant (WR) type receptacle.
- Receptacle must have 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.

### 3) 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.

### 4) Other

- Building Permits are required. Secure a Building Permit from your municipality prior to beginning work.
- Pool Alarms may be required. (Check with your local Building Department for additional information.)
- All receptacles located within 20' of the inside walls of a storable pool wall must be GFCI protected.
- Overhead power lines within 10' of the edge of the storable pool must be at least 22 ½' above the water surface.



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# PERMANENTLY INSTALLED SWIMMING POOLS

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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

- Swimming pool pump motor receptacle must be located at least 6' from the inside pool wall, must be grounded, and Ground Fault Circuit Interrupter (GFCI) protected.
- Receptacle must have an extra-duty, in-use, weatherproof cover that can be closed when the cord is plugged in.
- Depending on the horsepower of the pump motor, the circuit line for the pump motor may need to be a continuous line going directly to the panel box, and isolated from all other receptacles and loads. (see NEC Table 430.248)
- Grounding Conductor (ground wire) for the pump motor cannot 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).
- Conduit
  - PVC – All PVC conduit\* must be buried at least 18" deep (12" if GFCI protected prior to entering the ground).
  - 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

- At least one (1) 15- or 20-ampere convenience receptacle must be located no closer than 6' and no further than 20' from the inside pool wall (Can be existing and/or wired with any approved wiring method). This receptacle cannot be located more than 6 1/2' above the grade level, deck, or platform serving the swimming pool.
- Convenience receptacle must be Ground Fault Circuit Interrupter (GFCI) protected, Tamper Resistant (TR), and Weather Resistant (WR) type receptacle.
- Must have an extra-duty, in-use, weatherproof cover that can be closed when in use (for all wet locations).
- May need to be separate from the pool pump receptacle wiring.
- Wiring
  - UF cable if buried must be at least 24" deep (12" if GFCI protected prior to entering the ground).
  - PVC – All PVC conduits\* must be buried at least 18" deep (12" if GFCI protected prior to entering the ground).
  - Metal – All Rigid Metal Conduits\* must be at least 6" deep

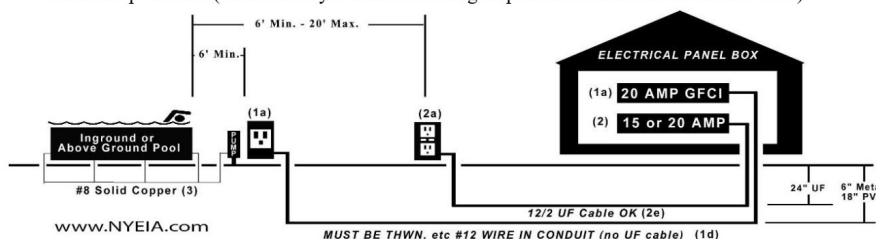
\* Wires used in conduit must be single strand wires (ex: THWN, etc. - NO NM or UF CABLE in Conduit).

### 3) Bonding The Pool

- All metal parts must be bonded together using a #8 (or larger) solid copper wire.
- Must use non-corrosive clamps that are listed for direct burial use.
- Conductive pool shells must be bonded in a minimum of four (4) equal points uniformly spaced around the pool
- 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.
- A minimum of nine (9) square inches of corrosion resistant metal must be in the water to bond the water.

### 4) Other

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



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