



Amherst Building Department

Pool and Hot Tub Guidelines

A permit is required to install a swimming pool (In-ground or above ground) or hot tub.

The edge of any pool or hot tube sidewalls, bordering walkway or deck shall be a minimum of five (5) feet from any side or rear lot line. Pools and hot tubs are not permitted in the front yard. A corner lot is considered to have two (2) front yard areas.

All pools and hot tubs require a perimeter barrier to be installed a minimum of 48 inches high as measured from the generally established grade level. House, garage or accessory structure walls may be considered a component of the perimeter barrier. Sidewalls of any above ground pool or hot tub may serve as the perimeter barrier provided they are a minimum of 48 inches high as measured from the generally established grade level. A perimeter barrier, either permanent or temporary, must be in place when a pool or hot tub contains 18 inches of water or more.

Any gate allowing access to an in-ground pool area must be self-latching and be inaccessible for small children to enter the area. Above ground pool ladders shall include a barrier or gate prohibiting access to small children.

A grade plan is required for all in-ground and above ground pools not installed on grade. The grading plan shall include a minimum of four (4) existing grade shots around the proposed pool location and two (2) along each property line using the main structures top of foundation as the benchmark. Upon project completion, the same grade locations will be verified on site to ensure they are within tolerances as to not cause drainage issue to neighboring properties.

Pools and hot tubs are not permitted to be installed in an easement or flood plain zone.

All pools, hot tubs and their components shall be installed in accordance to all applicable building codes and manufacturers' installation instructions.

Permit approval does not release the homeowner of responsibility if pools or hot tubs are installed within an easement or flood plain nor does permit approval supersede any deed restrictions or void prior conditions rendered by the Board of Zoning Appeals.

Permits are valid for twelve (12) months from the date of issue.

All contractors and subcontractors are required to be licensed with the City of Amherst Building Department.

The following text and illustrated details are taken directly from the National Electrical Code as adopted by the Amherst Codified Ordinance chapter 1311.

Overhead Wire Clearances and Wire Burial Depths

Table 680.9(A) Overhead Conductor Clearances

Clearance Parameters	Insulated Cables, 0–750 Volts to Ground, Supported on and Cabled Together with a Solidly Grounded Bare Messenger or Solidly Grounded Neutral Conductor		All Other Conductors Voltage to Ground			
			0 through 15 kV		Over 15 through 50 kV	
	m	ft	m	ft	m	ft
A. Clearance in any direction to the water level, edge of water surface, base of diving platform, or permanently anchored raft	6.0	22.5	7.5	25	8.0	27
B. Clearance in any direction to the observation stand, tower, or diving platform	4.4	14.5	5.2	17	5.5	18
C. Horizontal limit of clearance measured from inside wall of the pool	This limit shall extend to the outer edge of the structures listed in A and B of this table but not less than 3 m (10 ft).					

680.12 Equipment Rooms and Pits. Electrical equipment shall not be installed in rooms or pits that do not have drainage that prevents water accumulation during normal operation or filter maintenance. Equipment shall be suitable for the environment in accordance with 300.6.

Informational Note: Chemicals such as chlorine cause severe corrosive and deteriorating effects on electrical connections, equipment, and enclosures when stored and kept in the same vicinity. Adequate ventilation of indoor spaces such as equipment and storage rooms is addressed by ANSI/APSP-11, *Standard for Water Quality in Public Pools and Spas*, and can reduce the likelihood of the accumulation of corrosive vapors.

680.13 Maintenance Disconnecting Means. One or more means to simultaneously disconnect all ungrounded conductors shall be provided for all utilization equipment other than lighting. Each means shall be readily accessible and within sight from its equipment and shall be located at least 1.5 m (5 ft) horizontally from the inside walls of a pool, spa, fountain, or hot tub unless separated from the open water by a permanently installed barrier that provides a 1.5 m (5 ft) reach path or greater. This horizontal distance shall be measured from the water's edge along the shortest path required to reach the disconnect.

N 680.14 Corrosive Environment.

(A) General. Areas where pool sanitation chemicals are stored, as well as areas with circulation pumps, automatic chlorinators, filters, open areas under decks adjacent to or abutting the pool structure, and similar locations shall be considered to be a corrosive environment. The air in such areas shall be considered to be laden with acid, chlorine, and bromine vapors, or any combination of acid, chlorine, and bromine vapors, and any liquids or condensation in those areas shall be considered to be laden with acids, chlorine, and bromine vapors, or any combination of acid, chlorine, and bromine vapors.

(B) Wiring Methods. Wiring methods in the areas described in 680.14(A) shall be listed and identified for use in such areas. Rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, and reinforced thermosetting resin conduit shall be considered to be resistant to the corrosive environment specified in 680.14(A).

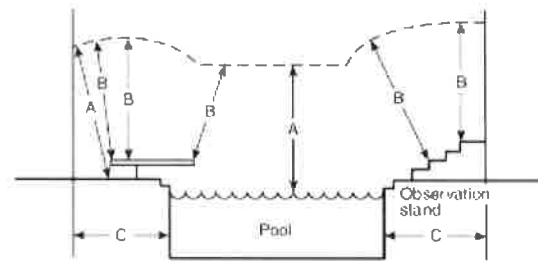


FIGURE 680.9(A) Clearances from Pool Structures.

Part II. Permanently Installed Pools

680.20 General. Electrical installations at permanently installed pools shall comply with the provisions of Part I and Part II of this article.

680.21 Motors.

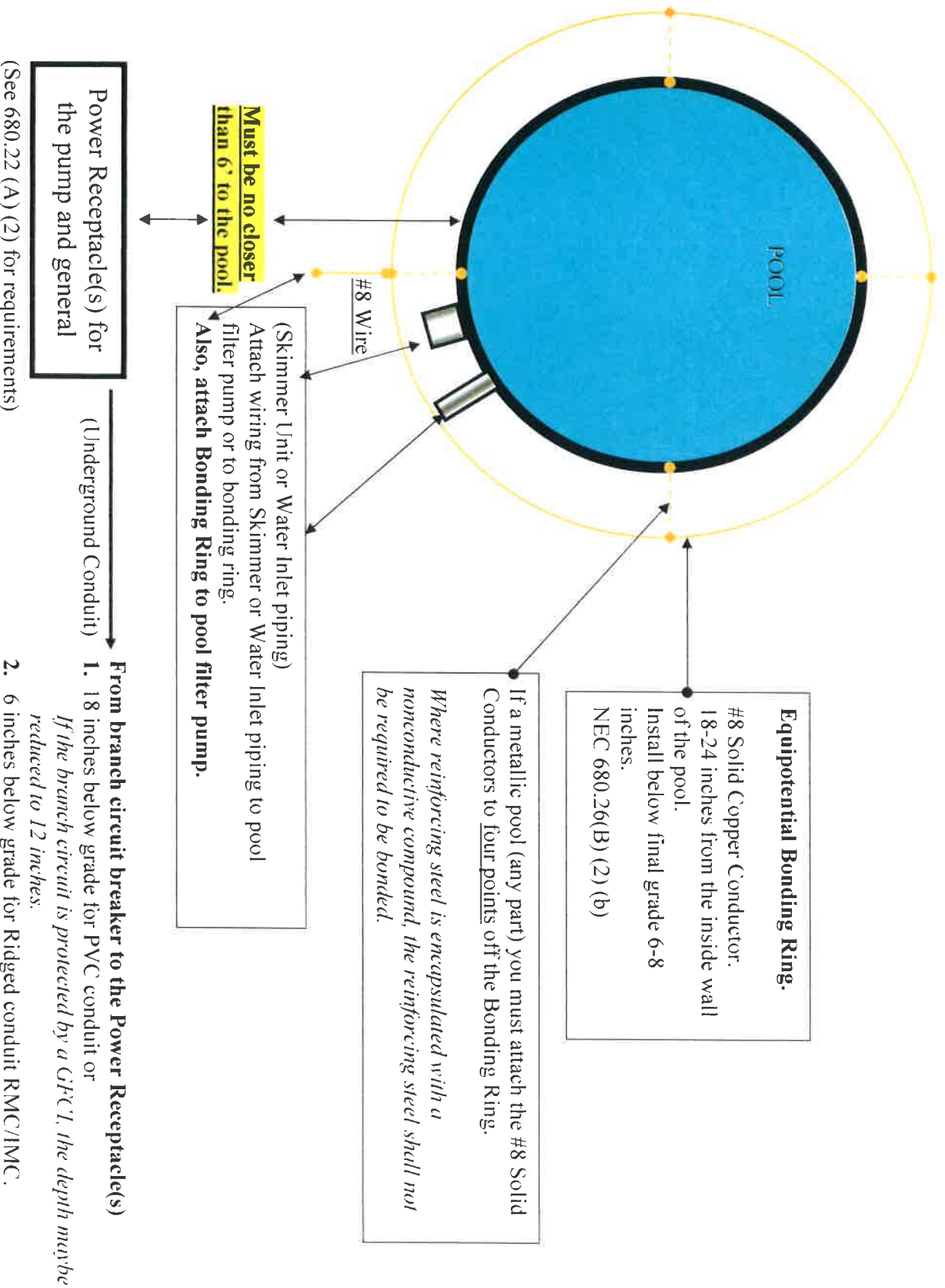
(A) Wiring Methods. The wiring to a pool motor shall comply with (A)(1) unless modified for specific circumstances by (A)(2), (A)(3), (A)(4), or (A)(5).

(1) General. Wiring methods installed in the corrosive environment described in 680.14 shall comply with 680.14(B) or shall be type MC cable listed for that location. Wiring methods installed in these locations shall contain an insulated copper equipment grounding conductor sized in accordance with Table 250.122 but not smaller than 12 AWG.

Where installed in noncorrosive environments, branch circuits shall comply with the general requirements in Chapter 3.

(2) Flexible Connections. Where necessary to employ flexible connections at or adjacent to the motor, liquidtight flexible metal or liquidtight flexible nonmetallic conduit with listed fittings shall be permitted.

(3) Cord-and-Plug Connections. Pool-associated motors shall be permitted to employ cord-and-plug connections. The flexible cord shall not exceed 900 mm (3 ft) in length. The flexible cord shall include a copper equipment grounding conductor.



Equipotential Bonding Ring.
 #8 Solid Copper Conductor.
 18-24 inches from the inside wall of the pool.
 Install below final grade 6-8 inches.
 NEC 680.26(B) (2) (b)

If a metallic pool (any part) you must attach the #8 Solid Conductors to four points off the Bonding Ring.
Where reinforcing steel is encapsulated with a nonconductive compound, the reinforcing steel shall not be required to be bonded.

(Skimmer Unit or Water Inlet piping)
 Attach wiring from Skimmer or Water Inlet piping to pool filter pump or to bonding ring.
 Also, attach **Bonding Ring** to pool filter pump.

Power Receptacle(s) for the pump and general

- (Underground Conduit) → **From branch circuit breaker to the Power Receptacle(s)**
1. 18 inches below grade for PVC conduit or
If the branch circuit is protected by a GFCI, the depth may be reduced to 12 inches.
 2. 6 inches below grade for Ridged conduit RMC/IMC.
- (See 680.22 (A) (2) for requirements)

680.21 Motors.

(A) Wiring Methods. The wiring to a pool motor shall comply with (A)(1) unless modified for specific circumstances by (A)(2), (A)(3), (A)(4), or (A)(5).

(1) General. The branch circuits for pool-associated motors shall be installed in rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, reinforced thermosetting resin conduit, or Type MC cable listed for the location.

Other wiring methods and materials shall be permitted in specific locations or applications as covered in this section. Any wiring method employed shall contain an **insulated** copper equipment-grounding conductor sized in accordance with 250.122 but not smaller than 12 AWG... *(This means the use of Non-Metallic Cable would not be permitted, as it does not contain an insulated copper equipment-grounding conductor).*

680.22 Lighting, Receptacles, and Equipment.

(A) Receptacles.

(1) Required Receptacles, Location. Where a permanently installed pool is installed, no fewer than one 125-volt, 15- or 20-ampere receptacle on a general-purpose branch circuit shall be located not less than 1.83 m (6 ft) from, and not more than 6.0 m (20 ft) from, the inside wall of the pool. This receptacle shall be located not more than 2.0 m (6 ft 6 in.) above the floor, platform, or grade level serving the pool.

(2) Circulation and Sanitation System, Location. Receptacles that provide power for water-pump motors or for other loads directly related to the circulation and sanitation system shall be located at least 3.0 m (10 ft) from the inside walls of the pool, or not less than 1.83 m (6 ft) from the inside walls of the pool if they meet all of the following conditions:

(1) Consist of single receptacles

(2) Are of the grounding type

(3) Have GFCI protection

(3) Other Receptacles, Location. Other receptacles shall be not less than 1.83 m (6 ft) from the inside walls of a pool.

(4) GFCI Protection. All 15- and 20-ampere, single-phase, 125-volt receptacles located within 6.0 m (20 ft) of the inside walls of a pool shall be protected by a ground-fault circuit interrupter.

(5) Measurements. In determining the dimensions in this section addressing receptacle spacings, the distance to be measured shall be the shortest path the supply cord of an appliance connected to the receptacle would follow without piercing a floor, wall, ceiling, doorway with hinged or sliding door, window opening, or other effective permanent barrier.

680.26 Equipotential Bonding.

(B) Bonded Parts. The parts specified in 680.26(B)(1) through (B)(7) shall be bonded together using solid copper conductors, insulated covered, or bare, not smaller than 8 AWG or with rigid metal conduit of brass or other identified corrosion-resistant metal. Connections to bonded parts shall be made in accordance with 250.8. An 8 AWG or larger solid copper bonding conductor provided to reduce voltage gradients in the pool area shall not be required to be extended or attached to remote panelboards, service equipment, or electrodes.

(2) Perimeter Surfaces. The perimeter surface shall extend for 1 m (3 ft) horizontally beyond the inside walls of the pool and shall include unpaved surfaces as well as poured concrete and other types of paving. Bonding to perimeter surfaces shall be provided as specified in 680.26(B)(2)(a) or (2)(b) and shall be attached to the pool reinforcing steel or copper conductor grid at a minimum of four (4) points uniformly spaced around the perimeter of the pool. For nonconductive pool shells, bonding at four points shall not be required.

(b) Alternate Means. Where structural reinforcing steel is not available or is encapsulated in a nonconductive compound, a copper conductor(s) shall be utilized where the following requirements are met:

(1) At least one minimum 8 AWG bare solid copper conductor shall be provided.

(2) The conductors shall follow the contour of the perimeter surface.

(3) Only listed splices shall be permitted.

(4) The required conductor shall be 450 to 600 mm (18 to 24 in.) from the inside walls of the pool.

(5) The required conductor shall be secured within or under the perimeter surface 100 mm to 150 mm (4 in. to 6 in.) below the subgrade.

(C) Pool Water. Where none of the bonded parts is in direct connection with the pool water, the pool water shall be in direct contact with an approved corrosion-resistant conductive surface that exposed not less than 5800 mm² (9 in.²) of surface area to the pool water at all times. The conductive surface shall be located where it is not exposed to physical damage or dislodgement during usual pool activities, and it shall be bonded in accordance with 680.26(B).

These pool codes were taken from 2014 edition of the National Electrical Code (NEC) and no way constitutes the complete code. The purpose of this Code is the practical safeguarding of persons and property from hazards arising from the use of electricity. The NEC is intended for use by capable engineers and electrical contractors in the design and/or installation of electrical equipment; by inspection authorities exercising legal jurisdiction over electrical installations; by property insurance inspectors; by qualified industrial, commercial, and residential electricians; and by instructors of electrical apprentices or students.

This guide was prepared to assist you with the installation of your new pool wiring as it relates to the current code(s). As a State of Ohio Electrical Safety Inspector, and employed by this jurisdiction, my authority is to inspect all electrical installations as it pertains to the code(s), and the approvals granted. I am here to help with any code questions, however, I am not permitted to design or engineer any part of your new pool wiring.

If you would have any questions pertaining to this code as it relates to your design, please do not hesitate to contact me.

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