

POOL PLAN CHECK LIST

1. OBTAIN ORDINANCE
2. SUBMIT POOL PLAN DETAILS (above ground or in ground)
3. INDICATE SIZE/DIMENSION HEIGHT
4. DISTANCE FROM HOUSE AND PROPERTY LINES
5. PROVIDE ELECTRICAL DETAIL (2 GFI REQUIRED)
6. FENCE WITH LOCK
7. LIGHTS
8. REMOVABLE LADDERS
9. BACK FLOW PREVENTER

DATE: _____

NAME: _____

ADDRESS: _____

PHONE: _____

CHAPTER 1131
Swimming Pools

- 1131.01 Permit required.
- 1131.02 Location and distance from property lines.
- 1131.03 Barrier required.
- 1131.04 Areaway around pool.
- 1311.05 Lights.
- 1311.06 Ladders.
- 1311.07 Height of pool.
- 1311.08 Potable water supply system protection.
- 1311.09 Swimming pool water drainage.
- 1311.99 Penalty.

CROSS REFERENCES

- Power to regulate fences - see Ohio R.C. 715.27
- Fences around pools - see P. & Z. 997.04
- Swimming pool permit fee - see BLDG. 1125.07(e)
- Fence permit fee - see BLDG. 1125.07(k)
- Landscaping services required - see BLDG. Ch. 1133

1131.01 PERMIT REQUIRED.

No person shall construct or install a swimming pool without first making application and obtain a permit therefor from the Building Commissioner. The applicant must submit plans showing the size, location, drainage, electrical and detail construction of the swimming pool. A site plan shall also be included showing the location of the pool in respect to the property lines, easements, and the existing dwellings. All permits for pools shall be issued by the Building Commissioner with no approval required by the Building Board. No permit shall be issued without the approval of the plans by the City Engineer. The plan review expenses incurred by the City Engineer shall be borne by the applicant prior to a permit being issued. The Building Commissioner shall have final approval of the foregoing construction requirements. (Ord. 21-2001. Passed 7-9-01.)

1131.02 LOCATION AND DISTANCE FROM PROPERTY LINES.

(a) No permanent or temporary swimming or wading pool, greater in area than seventy-five square feet and not enclosed in a permanent building or like structure, shall be located, constructed or maintained closer to any street, lot or parcel, side or rear line, or another structure than as follows:

- (1) All such pool shall be located, constructed or maintained in the rear yard. The rear yard is defined as a yard across the full width of the lot or parcel extending from back of the building to the rear property line.
- (2) No such pool shall be located, constructed or maintained closer to any sideline than ten feet.
- (3) No such pool shall be located, constructed or maintained closer to any rear lot or parcel line than ten feet.
- (4) Pools shall not be located, constructed, or maintained within ten feet of another structure.
(Ord. 59-2004. Passed 9-27-04.)

1131.03 BARRIER REQUIRED.

(a) Every in-ground swimming or wading pool which is not enclosed in a permanent building or like structure, shall have erected around it a barrier of sufficient strength and of a height not less than four feet.

(b) Every above-ground swimming or wading pool which is greater in area than seventy-five square feet (ten feet in diameter), and which is not enclosed in a permanent building or like structure, shall have erected around it a barrier of sufficient strength and of a height not less than four feet.

Exception: If no point of the exterior perimeter of the pool or pool structure is less than four foot above grade or any point in the four foot areaway required by Section 1131.04, a barrier is not required.

(c) The required barrier shall not be composed of vegetation.

(d) Access to any such pools, ponds or other bodies of water shall be through a gate or gates in the barrier. Such gate or gates shall be equipped in such manner that they may be, and in fact, shall be securely locked except when in use by the owner or with the owner's permission.

(e) If the barrier required above is a fence, the location of the fence shall be subject to any other ordinances regulating the placement, construction and maintenance of fences in the City as contained in Chapter 997.
(Ord. 59-2004. Passed 9-27-04.)

1131.04 AREAWAY AROUND POOL.

Every permanent or temporary swimming or wading pool, which is greater in area than seventy-five square feet and which is not enclosed in a permanent building or like structure, shall have an unobstructed areaway around the entire pool of not less than four feet.

(Ord. 45-1970. Passed 6-8-70.)

1131.05 LIGHTS.

Flood or other artificial light is used to illuminate the pool shall not be used after 11:00 p.m. where the pool is located within 200 feet of any neighboring building used for dwelling purposes. Such lights shall further be shielded to contain and direct light on the pool only.

(Ord. 59-2004. Passed 9-27-04.)

1131.06 LADDERS.

All removable ladders or any other means of ingress or egress used in conjunction with a swimming or wading pools must be removed, locked, or otherwise rendered unusable when such pool is not in use by the owner or with the owner's permission.

(Ord. 59-2004. Passed 9-27-04.)

1131.07 HEIGHT OF POOL.

No part of a swimming pool, exclusive of Hand Rails, Guard Rails or Protective Fencing shall be constructed on any lot to a height in excess of four feet eight inches above grade established for such lot. Height of protective fencing shall not exceed six feet above grade. (Ord. 59-2004. Passed 9-27-04.)

1131.08 POTABLE WATER SUPPLY SYSTEM PROTECTION.

Pool water fill system shall be protected by a listed and approved water "back

flow preventer” or vacuum breaker to prevent pool water flow into the potable water (drinking water) supply system.
(Ord. 46-1996. Passed 7-8-96.)

1131.09 SWIMMING POOL WATER DRAINAGE.

Swimming pools may be drained into the Sanitary Sewer System at any time. Swimming pools may be drained into the Storm Sewer System or directly to grade providing no chemicals (chlorine, soda ash, acid or any Ph stabilizing agents) have been added for a seven day period prior to draining. Swimming pool drain water shall not be allowed to enter abutting properties. (Ord. 47-1996. Passed 7-8-96.)

1131.99 PENALTY.

Any person, firm or corporation violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor, and upon conviction thereof, fined not more than five hundred dollars (\$500.00). Each day's continued violation shall constitute a separate offense.
(Ord. 45-1970. Passed 6-8-70.)

SWIMMING POOLS - ELECTRICAL

1. Permanently installed pool - definition.

2008 NEC - Art. 680.2 Definitions

Permanently Installed Swimming, Wading, Immersion, and Therapeutic Pools. Those that are constructed in the ground or partially in the ground, and all others capable of holding water in a depth greater than 1.0 m (42 in.), and all pools installed inside of a building, regardless of water depth, whether or not served by electrical circuits of any nature.

2. All Permanently Installed Swimming Pools must be Bonded.

2008 NEC – Art. 100 Definitions

Bonded (Bonding). Connected to establish electrical continuity and conductivity.

2008 NEC Article 680.26 Equipotential Bonding. - B. Permanently Installed Pools - Section 680.26 Bonding

(A) Performance. The bonding required by this section shall be installed to eliminate voltage gradients in the pool area as prescribed.

FPN: This section does not require that the 8 AWG or larger solid copper bonding conductor be extended or attached to any remote panelboard, service equipment, or any electrode.

2008 NEC - Art. 680.26 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.

(1) Conductive Pool Shells. Bonding to conductive pool shells shall be provided as specified in 680.26(B)(1)(a) or (B)(1)(b). Poured concrete, pneumatically applied or sprayed concrete, and concrete block with painted or plastered coatings shall all be considered conductive materials due to water permeability and porosity. Vinyl liners and fiberglass composite shells shall be considered to be nonconductive materials.

(a) Structural Reinforcing Steel. Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

Where structural reinforcing steel is encapsulated in a nonconductive compound, a copper conductor grid shall be installed in accordance with 680.26(B)(1)(b).

(b) Copper Conductor Grid. A copper conductor grid shall be provided and shall comply with (b)(1) through (b)(4).

- (1) Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing.
- (2) Conform to the contour of the pool and the pool deck.
- (3) Be arranged in a 300-mm (12-in.) by 300-mm (12-in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.)

2008 NEC - Art. 680.26 Bonding. (B) Bonded Parts. – Continued.

- (4) Be secured within or under the pool no more than 150 mm (6 in.) from the outer contour of the pool shell
- (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.
- (a) **Structural Reinforcing Steel.** Structural reinforcing steel shall be bonded in accordance with 680.26(B)(1)(a).
- (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.
- (3) **Metallic Components.** All metallic parts of the pool structure, including reinforcing metal not addressed in 680.26(B)(1)(a), shall be bonded. Where reinforcing steel is encapsulated with a nonconductive compound, the reinforcing steel shall not be required to be bonded.
- (4) **Underwater Lighting.** All metal forming shells and mounting brackets of no-niche luminaires shall be bonded.

Exception: Listed low-voltage lighting systems with nonmetallic forming shells shall not require bonding.

- (5) **Metal Fittings.** All metal fittings within or attached to the pool structure shall be bonded. Isolated parts that are not over 100 mm (4 in.) in any dimension and do not penetrate into the pool structure more than 25 mm (1 in.) shall not require bonding.
- (6) **Electrical Equipment.** Metal parts of electrical equipment associated with the pool water circulating system, including pump motors and metal parts of equipment associated with pool covers, including electric motors, shall be bonded.

Exception: Metal parts of listed equipment incorporating an approved system of double insulation shall not be bonded.

2008 NEC - Art. 680.26 Bonding - Continued.

(a) **Double-Insulated Water Pump Motors.** Where a double-insulated water pump motor is installed under the provisions of this rule, a solid 8 AWG copper conductor of sufficient length to make a bonding connection to a replacement motor shall be extended from the bonding grid to an accessible point in the vicinity of the pool pump motor. Where there is no connection between the swimming pool bonding grid and the equipment grounding system for the premises, this bonding conductor shall be connected to the equipment grounding conductor of the motor circuit.

(b) **Pool Water Heaters.** For pool water heaters rated at more than 50 amperes and having specific instructions regarding bonding and grounding, only those parts designated to be bonded shall be bonded and only those parts designated to be grounded shall be grounded.

(7) **Metal Wiring Methods and Equipment.** Metal-sheathed cables and raceways, metal piping, and all fixed metal parts shall be bonded.

Exception No. 1: Those separated from the pool by a permanent barrier shall not be required to be bonded.

Exception No. 2: Those greater than 1.5 m (5 ft) horizontally of the inside walls of the pool shall not be required to be bonded.

Exception No. 3: Those greater than 3.7 m (12 ft) measured vertically above the maximum water level of the pool, or as measured vertically above any observation stands, towers, or platforms, or any diving structures, shall not be required to be bonded.

(C) **Pool Water.** An intentional bond of a minimum conductive surface area of 5806 mm² (9 in.²) shall be installed in contact with the pool water. This bond shall be permitted to consist of parts that are required to be bonded in 680.26(B).

250.8 Connection of Grounding and Bonding Equipment.

(A) **Permitted Methods.** Grounding conductors and bonding jumpers shall be connected by one of the following means:

- (1) Listed pressure connectors
- (2) Terminal bars
- (3) Pressure connectors listed as grounding and bonding equipment
- (4) Exothermic welding process
- (5) Machine screw-type fasteners that engage not less than two threads or are secured with a nut
- (6) Thread-forming machine screws that engage not less than two threads in the enclosure
- (7) Connections that are part of a listed assembly
- (8) Other listed means

(B) **Methods Not Permitted.** Connection devices or fittings that depend solely on solder shall not be used.

3. Two (2) Ground-Fault Circuit-Interrupter (GFCI) protected receptacles required.

2008 NEC – Art. 680.22 Area Lighting, Receptacles, and Equipment.

(A) Receptacles.

- (1) **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) Employ a locking configuration
 - (3) Are of the grounding type
 - (4) Have GFCI protection
- (2) **Other Receptacles, Location.** Other receptacles shall be not less than 1.83 m (6 ft) from the inside walls of a pool.
- (3) **Dwelling Unit(s).** Where a permanently installed pool is installed at a dwelling unit(s), 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.
- (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.

(B) GFCI Protection. Outlets supplying pool pump motors from branch circuits with short-circuit and ground-fault protection rated 15 or 20 amperes, 125 volt or 240 volt, single phase, whether by receptacle or direct connection, shall be provided with ground-fault circuit-interrupter protection for personnel.

(C) Luminaires, Lighting Outlets, and Ceiling-Suspended (Paddle) Fans.

- (1) **New Outdoor Installation Clearances.** In outdoor pool areas, luminaires, lighting outlets, and ceiling-suspended (paddle) fans installed above the pool or the area extending 1.5 m (5 ft) horizontally from the inside walls of the pool shall be installed at a height not less than 3.7 m (12 ft) above the maximum water level of the pool.
- (2) **Indoor Clearances.** For installations in indoor pool areas, the clearances shall be the same as for outdoor areas unless modified as provided in this paragraph. If the branch circuit supplying the equipment is protected by a ground-fault circuit interrupter, the following equipment shall be permitted at a height not less than 2.3 m (7 ft 6 in.) above the maximum pool water level:
 - (1) Totally enclosed luminaires
 - (2) Ceiling-suspended (paddle) fans identified for use beneath ceiling structures such as provided on porches or patios.

2008 NEC - 680.22 Area Lighting, Receptacles, and Equipment – Continued.

(3) Existing Installations. Existing luminaires and lighting outlets located less than 1.5 m (5 ft) measured horizontally from the inside walls of a pool shall be not less than 1.5 m (5 ft) above the surface of the maximum water level, shall be rigidly attached to the existing structure, and shall be protected by a ground-fault circuit interrupter.

(4) GFCI Protection in Adjacent Areas. Luminaires, lighting outlets, and ceiling-suspended (paddle) fans installed in the area extending between 1.5 m (5 ft) and 3.0 m (10 ft) horizontally from the inside walls of a pool shall be protected by a ground-fault circuit interrupter unless installed not less than 1.5 m (5 ft) above the maximum water level and rigidly attached to the structure adjacent to or enclosing the pool.

(5) Cord-and-Plug-Connected Luminaires. Cord-and-plug-connected luminaires shall comply with the requirements of 680.7 where installed within 4.9 m (16 ft) of any point on the water surface, measured radially.

(D) Switching Devices. Switching devices shall be located at least 1.5 m (5 ft) horizontally from the inside walls of a pool unless separated from the pool by a solid fence, wall, or other permanent barrier. Alternatively, a switch that is listed as being acceptable for use within 1.5 m (5 ft) shall be permitted.

(E) Other Outlets. Other outlets shall be not less than 3.0 m (10 ft) from the inside walls of the pool. Measurements shall be determined in accordance with 680.22(A)(5).

FPN: Other outlets may include, but are not limited to, remote-control, signaling, fire alarm, and communications circuits.

4. Pool Filter cord maximum length, and equipment grounding conductor material.

2008 NEC – Art. 680.7 Cord-and-Plug Connected Equipment.

Fixed or stationary equipment, other than underwater luminaires, for a permanently installed pool shall be permitted to be connected with a flexible cord and plug to facilitate the removal or disconnection for maintenance or repair.

(A) Length. For other than storable pools, the flexible cord shall not exceed 900 mm (3 ft) in length.

(B) Equipment Grounding. The flexible cord shall have a copper equipment grounding conductor sized in accordance with 250.122 but not smaller than 12 AWG. The cord shall terminate in a grounding-type attachment plug.

(C) Construction. The equipment grounding conductors shall be connected to a fixed metal part of the assembly. The removable part shall be mounted on or bonded to the fixed metal part.

5. Weatherproof “in-use” (Bubble-type) cover required on Pool Filter receptacle.

2008 NEC Art. 406.8 Receptacles in Damp or Wet Locations.

(B) Wet Locations.

(1) 15- and 20-Ampere Receptacles in a Wet Location. 15- and 20-ampere, 125- and 250-volt receptacles installed in a wet location shall have an enclosure that is weatherproof whether or not the attachment plug cap is inserted. All 15- and 20-ampere, 125- and 250-volt nonlocking receptacles shall be listed weather-resistant type.

FPN: The types of receptacles covered by this requirement are identified as 5-15, 5-20, 6-15, and 6-20 in ANSI/NEMA WD 6-2002, National Electrical Manufacturers Association Standard for Dimensions of Attachment Plugs and Receptacles.]

6. Disconnect/switching device located at least five foot (5'-0") from inside walls of pool, spa, or hot tub.

2008 NEC – Art. 680.22 Area Lighting, Receptacles, and Equipment.

(D) Switching Devices. Switching devices shall be located at least 1.5 m (5 ft) horizontally from the inside walls of a pool unless separated from the pool by a solid fence, wall, or other permanent barrier. Alternatively, a switch that is listed as being acceptable for use within 1.5 m (5 ft) shall be permitted.

(E) Other Outlets. Other outlets shall be not less than 3.0 m (10 ft) from the inside walls of the pool. Measurements shall be determined in accordance with 680.22(A)(5).

7. Swimming Pool underground wiring location.

2008 NEC – Art. 680.10 Underground Wiring Location.

Underground wiring shall not be permitted under the pool or within the area extending 1.5 m (5 ft) horizontally from the inside wall of the pool unless this wiring is necessary to supply pool equipment permitted by this article. Where space limitations prevent wiring from being routed a distance 1.5 m (5 ft) or more from the pool, such wiring shall be permitted where installed in complete raceway systems of rigid metal conduit, intermediate metal conduit, or a nonmetallic raceway system. All metal conduit shall be corrosion resistant and suitable for the location. The minimum cover depth shall be as given in Table 680.10.

Table 680.10 Minimum Cover Depths

Wiring Method	Minimum Cover	
	mm	in.
Rigid metal conduit	150	6
Intermediate metal conduit	150	6
Nonmetallic raceways listed for direct burial without concrete encasement	450	18
Other approved raceways*	450	18

***Raceways approved for burial only where concrete encased shall require a concrete envelope not less than 50 mm (2 in.) thick.**

8. Overhead conductor clearance.

2008 NEC – Art. 680.8 Overhead Conductor Clearances.

Overhead conductors shall meet the clearance requirements in this section. Where a minimum clearance from the water level is given, the measurement shall be taken from the maximum water level of the specified body of water.

(A) Power. With respect to service drop conductors and open overhead wiring, swimming pool and similar installations shall comply with the minimum clearances given in Table 680.8 and illustrated in Figure 680.8.

FPN: Open overhead wiring as used in this article typically refers to conductor(s) not in an enclosed raceway.

Table 680.8 Overhead Conductor Clearances - Continued

Clearance Parameters	m		ft		m		ft	
	m	ft	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	6.9	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 & B of this table but not less than 3 m (10 ft).							

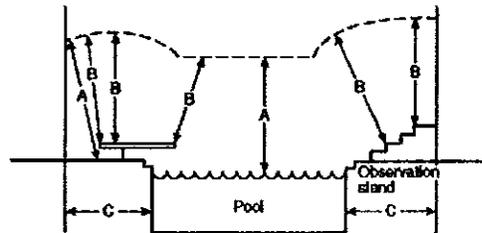


Figure 680.8 Clearances from pool structures.

(B) Communications Systems. Communication, radio, and television coaxial cables within the scope of Articles 800 through 820 shall be permitted at a height of not less than 3.0 m (10 ft) above swimming and wading pools, diving structures, and observation stands, towers, or platforms.

(C) Network-Powered Broadband Communications Systems. The minimum clearances for overhead network-powered broadband communications systems conductors from pools or fountains shall comply with the provisions in Table 680.6 for conductors operating at 0 to 750 volts ground.

SPAS AND HOT TUBS.

1. Spa or hot tub wiring, outdoor and indoor.

2008 NEC – Art. 680.40 General.

Electrical installations at spas and hot tubs shall comply with the provisions of Part I and Part IV of this article.

680.41 Emergency Switch for Spas and Hot Tubs.

A clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the recirculation system and jet system shall be installed at a point readily accessible to the users and not less than 1.5 m (5 ft) away, adjacent to, and within sight of the spa or hot tub. This requirement shall not apply to single-family dwellings.

680.42 Outdoor Installations.

A spa or hot tub installed outdoors shall comply with the provisions of Parts I and II of this article, except as permitted in 680.42(A) and (B), that would otherwise apply to pools installed outdoors.

(A) Flexible Connections. Listed packaged spa or hot tub equipment assemblies or self-contained spas or hot tubs utilizing a factory-installed or assembled control panel or panelboard shall be permitted to use flexible connections as covered in 680.42(A)(1) and (A)(2).

(1) Flexible Conduit. Liquidtight flexible metal conduit or liquidtight flexible nonmetallic conduit shall be permitted in lengths of not more than 1.8 m (6 ft).

(2) Cord-and-Plug Connections. Cord-and-plug connections with a cord not longer than 4.6 m (15 ft) shall be permitted where protected by a ground-fault circuit interrupter.

(B) Bonding. Bonding by metal-to-metal mounting on a common frame or base shall be permitted. The metal bands or hoops used to secure wooden staves shall not be required to be bonded as required in 680.26.

(C) Interior Wiring to Outdoor Installations. In the interior of a one-family dwelling or in the interior of another building or structure associated with a one-family dwelling, any of the wiring methods recognized in Chapter 3 of this Code that contain a copper equipment grounding conductor that is insulated or enclosed within the outer sheath of the wiring method and not smaller than 12 AWG shall be permitted to be used for the connection to motor, heating, and control loads that are part of a self-contained spa or hot tub or a packaged spa or hot tub equipment assembly. Wiring to an underwater luminaire shall comply with 680.23 or 680.33.

680.43 Indoor Installations.

A spa or hot tub installed indoors shall comply with the provisions of Parts I and II of this article except as modified by this section and shall be connected by the wiring methods of Chapter 3.

Exception: *Listed spa and hot tub packaged units rated 20 amperes or less shall be permitted to be cord-and-plug-connected to facilitate the removal or disconnection of the unit for maintenance and repair.*

(A) Receptacles. At least 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 exceeding 3.0 m (10 ft) from, the inside wall of the spa or hot tub.

(1) Location. Receptacles shall be located at least 1.83 m (6 ft) measured horizontally from the inside walls of the spa or hot tub.

680.43 Indoor Installations - Continued.

(2) Protection, General. Receptacles rated 125 volts and 30 amperes or less and located within 3.0 m (10 ft) of the inside walls of a spa or hot tub shall be protected by a ground-fault circuit interrupter.

(3) Protection, Spa or Hot Tub Supply Receptacle. Receptacles that provide power for a spa or hot tub shall be ground-fault circuit-interrupter protected.

(4) 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.

(B) Installation of Luminaires, Lighting Outlets, and Ceiling-Suspended (Paddle) Fans.

(1) Elevation. Luminaires, except as covered in 680.43(B)(2), lighting outlets, and ceiling-suspended (paddle) fans located over the spa or hot tub or within 1.5 m (5 ft) from the inside walls of the spa or hot tub shall comply with the clearances specified in (B)(1)(a), (B)(1)(b), and (B)(1)(c) above the maximum water level.

(a) Without GFCI. Where no GFCI protection is provided, the mounting height shall be not less than 3.7 m (12 ft).

(b) With GFCI. Where GFCI protection is provided, the mounting height shall be permitted to be not less than 2.3 m (7 ft 6 in.).

(c) Below 2.3 m (7 ft 6 in.). Luminaires meeting the requirements of item (1) or (2) and protected by a ground-fault circuit interrupter shall be permitted to be installed less than 2.3 m (7 ft 6 in.) over a spa or hot tub:

(1) Recessed luminaires with a glass or plastic lens, nonmetallic or electrically isolated metal trim, and suitable for use in damp locations

(2) Surface-mounted luminaires with a glass or plastic globe, a nonmetallic body, or a metallic body isolated from contact, and suitable for use in damp locations.

2. Components to be bonded/grounded.

2008 NEC – Art. 680.43 Indoor Installations.

(C) Wall Switches. Switches shall be located at least 1.5 m (5 ft), measured horizontally, from the inside walls of the spa or hot tub.

(D) Bonding. The following parts shall be bonded together:

(1) All metal fittings within or attached to the spa or hot tub structure.

(2) Metal parts of electrical equipment associated with the spa or hot tub water circulating system, including pump motors.

(3) Metal raceway and metal piping that are within 1.5 m (5 ft) of the inside walls of the spa or hot tub and that are not separated from the spa or hot tub by a permanent barrier.

(4) All metal surfaces that are within 1.5 m (5 ft) of the inside walls of the spa or hot tub and that are not separated from the spa or hot tub area by a permanent barrier

Exception No. 1: Small conductive surfaces not likely to become energized, such as air and water jets and drain fittings, where not connected to metallic piping, towel bars, mirror frames, and similar nonelectrical equipment, shall not be required to be bonded.

Exception No. 2: Metal parts of electrical equipment associated with the water circulating system, including pump motors that are part of a listed self-contained spa or hot tub.

2008 NEC – Art. 680.43 Indoor Installations. (D) Bonding – Continued.

- (5) Electrical devices and controls that are not associated with the spas or hot tubs and that are located not less than 1.5 m (5 ft) from such units; otherwise, they shall be bonded to the spa or hot tub system.

(E) Methods of Bonding. All metal parts associated with the spa or hot tub shall be bonded by any of the following methods:

- (1) The interconnection of threaded metal piping and fittings.
- (2) Metal-to-metal mounting on a common frame or base.
- (3) The provisions of a solid copper bonding jumper, insulated, covered, or bare, not smaller than 8 AWG.

(F) Grounding. The following equipment shall be grounded:

- (1) All electrical equipment located within 1.5 m (5 ft) of the inside wall of the spa or hot tub.
- (2) All electrical equipment associated with the circulating system of the spa or hot Tub.