

- (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) **Copper Grid.** Where structural reinforcing steel is not available or is encapsulated in a nonconductive compound, copper grid shall be used where the following requirements are met:

- (1) The copper grid shall be constructed of 8 AWG solid bare copper and be arranged in accordance with 680.26(B)(1)(b)(3).
- (2) The copper grid shall follow the contour of the perimeter surface extending 1 m (3 ft) horizontally beyond the inside walls of the pool.
- (3) Only listed splicing devices or exothermic welding shall be permitted.
- (4) The copper grid shall be secured within or under the deck or unpaved surfaces between 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.

Δ (5) **Metal Fittings.** All metal fittings within or attached to the pool structure shall be bonded.

Exception: The following shall not be required to be bonded:

- (1) 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.)
- (2) Metallic pool cover anchors intended for insertion in a concrete or masonry deck surface, 25 mm (1 in.) or less in any dimension and 51 mm (2 in.) or less in length
- (3) Metallic pool cover anchors intended for insertion in a wood or composite deck surface, 51 mm (2 in.) or less in any flange dimension and 51 mm (2 in.) or less in length

(6) **Electrical Equipment.** Metal parts of the following electrical equipment shall be bonded:

- (1) Electrically powered pool cover(s)
- (2) Pool water circulation, treatment, heating, cooling, or dehumidification equipment
- (3) Unless separated from the pool by a permanent barrier that prevents contact by a person, any other electrical equipment within 1.5 m (5 ft) measured horizontally from the inside wall of the pool, or 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

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

(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 swimming pool equipotential bonding means to an accessible point in the vicinity of the pool pump motor. Where there is no connection between the swimming pool equipotential bonding means 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.

Δ (7) **Fixed Metal Parts.** All fixed metal parts, including, but not limited to, metal-sheathed cables and raceways, metal piping, metal awnings, metal fences, and metal door and window frames, shall be bonded where located no greater than either of the following:

- (1) 1.5 m (5 ft) horizontally from the inside walls of the pool
- (2) 3.7 m (12 ft) vertically above the maximum water level of the pool, observation stands, towers, or platforms, or any diving structures

Exception: Those separated from the pool by a permanent barrier that prevents contact by a person shall not be required to be bonded.

The metal parts required to be bonded include all metal parts of electrical equipment associated with the water-circulating system of the pool, all metal parts of the pool structure, and all fixed metal parts within 5 feet of the inside walls of the pool and not separated by a permanent barrier. The bonding of these parts can be accomplished by one or more of the following methods using a solid 8 AWG or larger copper conductor that is insulated, covered, or bare:

1. Connecting the parts directly to each other in series or parallel configurations
2. Connecting the parts to the unencapsulated structural metal forming the shell of a conductive pool or connecting the parts to a copper conductor grid system used around the contour of a conductive pool shell
3. Connecting the parts using the pool shell constructed of bolted or welded steel as a common connection point
4. Connecting the parts to the perimeter bonding grid consisting of either structural reinforcing steel (rebar or welded wire mesh) or a solid 8 AWG bare copper conductor encircling the pool's perimeter