

WIRING REQUIREMENTS FOR SWIMMING POOLS

2017 National Electrical Code

PERMANENTLY INSTALLED SWIMMING POOLS

National Electrical Code definition are those pools that are constructed in the ground or partially in the ground and all other pools capable of holding water with a depth greater than 42-inches.

Pool Pump Receptacle (Outlet) and Wiring Methods

1. For permanent pools, the pump motor receptacle shall be located between 6-feet to 10-feet from the inside pool wall and the receptacle must be a single twist-lock, GFCI (Ground Fault) protected outlet. Article 680.22(A)(2)
2. The outdoor pump receptacle must have a weatherproof cover that can be closed when the pump cord is plugged in. Article 406.9(B)(2)
3. The electrical circuit line for a permanently installed pool pump motor must go directly to a panel box and is to be isolated from all other receptacles. Article 100.12
4. The wire for the pump motor shall not be less than #12 AWG insulated copper and must be in conduit. Article 680.21(A)(1) and Article 680.11
5. In the interior of a one family dwelling Type NM cable may be used.
6. The cord on the pump must be 3-feet long maximum and a minimum of #12 AWG. Article 680.22(A)(3)

Conduit Depth:

Electrical PVC at least 18-inches deep. Table 300.5 (12-inches if all conductors are GFCI protected, rated 120 volts or less with maximum overcurrent protection of 20 amps.) Conductors used in conduit must be individual stranded wires. (ex. THWN, XHHN Etc. NO NM or UF cable in conduit)

Convenience Receptacle (outlet) and Wiring Methods

1. At least one(1) 15-20 amp convenience receptacle must be located no closer than 6-feet but no further than 20-feet from the outside of the pool wall. May be existing and/or wired with any approved wiring method. Article 680.22(A)(1)
2. Convenience receptacle shall be separate from the pool pump receptacle wiring. Article 110.12
3. Convenience receptacle must be GFCI (Ground Fault) protected. 680.22(A)(4)
4. Convenience receptacle shall have an in-use bubble cover where located outdoors. 406.9(B)(1)

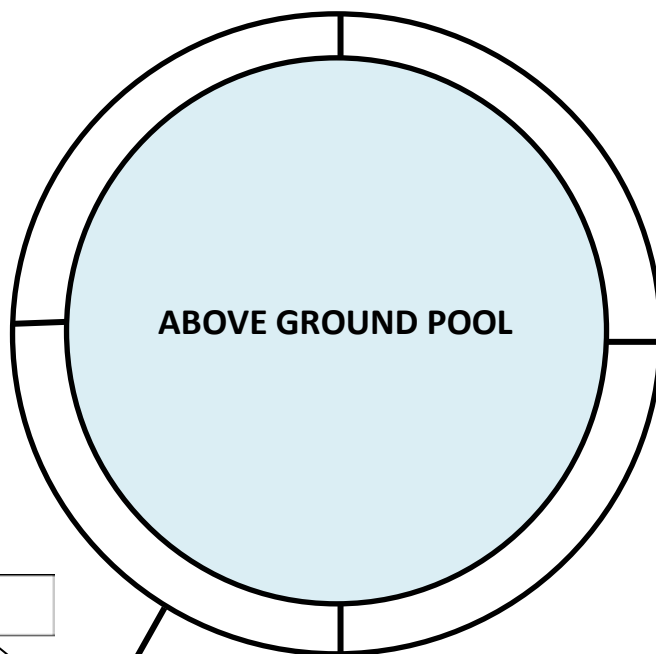
Bonding The Pool

1. All metal parts must be bonded together using a #8 (or larger) solid copper wire. 680.26(B)
2. Conductive pool shells must be bonded in a minimum of four (equal) points uniformly spaced around the pool. 680.26(B)(2)
3. Above ground pools must have a #8 (or larger) solid copper wire buried 4-inches to 6-inches below finished grade. This bond wire will be placed 18-inches to 24-inches from the pool wall, all the way around the pool. This equipotential bonding ring shall start and return/terminate at the pool pump. 680.26(B)(2)(b)
4. Bonding points or attachment must use listed non-corrosive lugs. 250.8
5. A minimum of nine (9) square inches of metal must be provided to bond the water. 680.26(C)

Other

1. All permanent and seasonal pools with a water depth greater than 24-inches as well as all outdoor located spas and hot tubs require building permits. Permanently installed pools require permanent electrical wiring and need to be inspected.
2. Pool alarms are required. (UL listed or tested)
3. Circulating equipment must be controlled by an energy saving timer.

Bonding lugs at 4 locations



**Ring of #8 solid copper wire
4-6 inches below grade
18-24 inches**

48 inches

Pool Pump

**#12 pool pump cord
(max 3 feet)**

- **Post 6 feet from pool**
- **Twist-lock receptacle for pump**
- **Convenience receptacle on post or within 20 feet of pool**

Trench 12-18 inches deep

**PVC conduit in trench
#12 minimum blk/wht/green THWN
wire or equivalent**

Time clock for pump