

# Electrical WIRING REQUIREMENTS FOR SWIMMING POOLS

2008 National Electrical Code

## PERMANENTLY INSTALLED SWIMMING POOLS;

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

### 1) Pool Pump Receptacle (Outlet) and Wiring Methods

- a. For permanently intended pump motor receptacle shall located between 6' to 10' feet from the inside pool wall, the receptacle must be a single twist-lock outlet, and always a GFCI (Ground Fault) protected. (see diagram 1a & 1d)
- b. The outdoor pump receptacle must have a weatherproof cover that can be closed when the pump cord is plugged in, [ UL Listed or tested] (In use type cover).
- c. The electrical circuit line for a permanently intended pool pump motor must be a continuous line going directly to panel box, and is to be isolated from all other receptacles. (1a)
- d. The wire for the pump motor shall not be less than #12 AWG insulated copper grounded wire, and must be in conduit, (except when entering a building the wire can change to NM wire "plastic sheathed") (Cannot use NM wire in conduit)

#### Conduit depth

- Electrical PVC\* - at least 18" deep. (12" if GFCI protected)
- Metal conduit\*- at least 6" deep. \*

\*wires used in conduit must be single strand wire, (ex: THWN,XHHN Etc. NO NM or UF cable in conduit )

### 2) Convenience Receptacle (outlet) and Wiring Methods

- a. At least one (1) 15 – 20 ampere convenience receptacle must be located no closer than 6' feet but no further than 20' feet from the outside of the pool wall. (Can be existing and/or wired with any approved wiring method) (see diagram 2 & 2a)
- b. Convenience receptacle (outlet) shall separate from the pool pump receptacle wiring.
- c. Convenience receptacle (outlet) must be GFCI (Ground Fault) protected.
- d. Convenience receptacle (outlet) shall an applicable weatherproof or damp cover were exposed or located outdoors has applicable such has closed when a cord is plugged in, UL Listed / tested (In use type cover).

#### Conduit or buried UF depths

- UF cable if buried must be 18" deep. ( NEC 12" if GFCI protected)
- Electrical PVC\* - at least 18" deep. (NEC 12" if GFCI protected)
- Metal conduit\*- at least 6" deep.

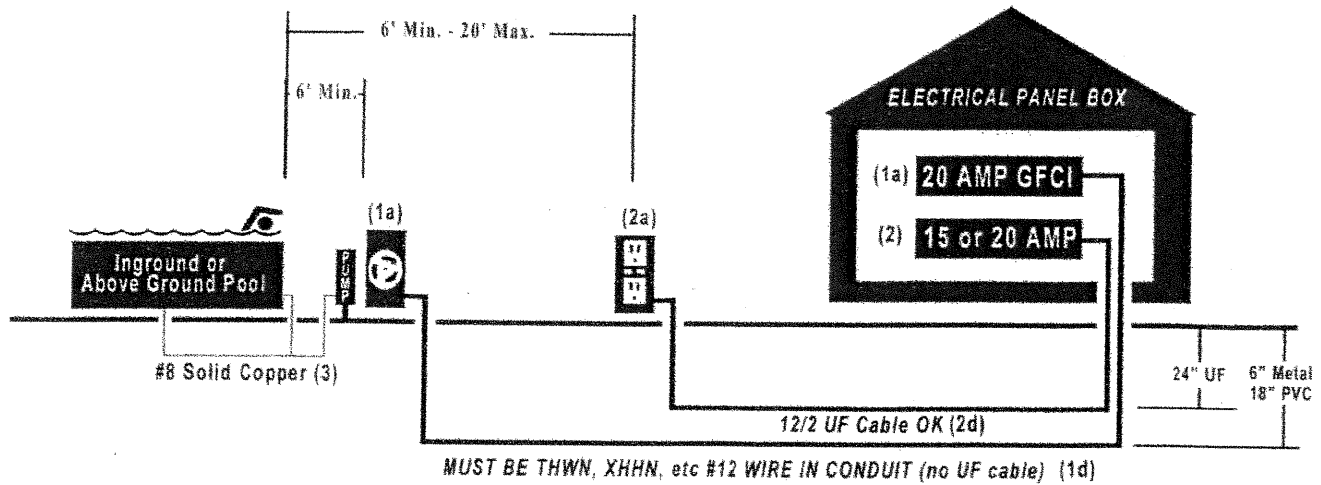
\*wires used in conduit must be single strand wire, (ex: THWN,XHHN Etc. NO NM or UF cable in conduit )

### 3) Bonding The Pool

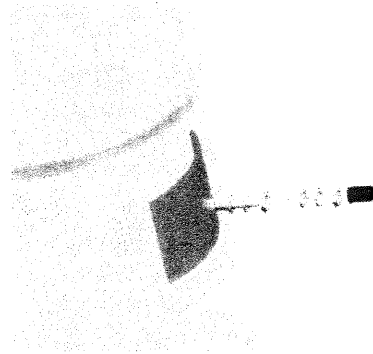
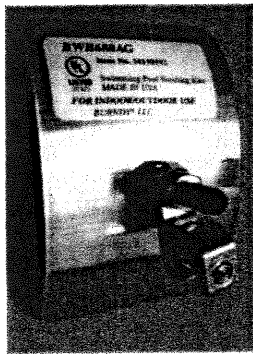
- a. All metal parts must be bonded together using a #8 (or larger) solid copper wire.
- b. Conductive pool shells must be boned in a minimum of four (equal) points uniformly spaced around the pool.
- c. Non-conductive pool shells must have a #8 (or larger) solid copper wire buried 4" - 6" below finished grade with such bond wire placed from 18" – 24" from the inside pool wall around the pool, (equipotential bonding) that which starts and returns/ terminates at the pool pump.
- d. Bonding points or attachment must use non-corrosive clamps.
- e. A minimum of nine (9) square inches of metal must in the water to bond the water.

### 4) Other

- a. All permanently and seasonal pools with a water depth greater than 24" inches as well all outdoor located spas and hot tubs require building permits. Permanently installed pools require permanent electrical wiring and are to be inspected by a third party electrical inspection agency.
- b. Pools alarms are required. [ UL Listed or tested]
- c. Circulating equipment requires to be provided with an energy saving timer.
- d. Pools shall be set back at least 10' horizontally from overhead power lines.



PLEASE CONTACT YOUR LOCAL INSPECTOR IF YOU HAVE ANY QUESTIONS



**“NEC 2008 680.26(C) states: “An intentional bond of a minimum conductive surface area of 9” 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).”**

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