

POOL NOTES

HSC 115928. Whenever a building permit is issued for the construction of a new swimming pool or spa, the pool or spa shall meet all the following requirements:

- (a) (1) The suction outlets of the pool or spa for which the permit is issued shall be equipped to provide circulation throughout the pool or spa as prescribed in paragraphs (2) and (3).
(2) The swimming pool or spa shall either have at least two circulation suction outlets per pump that shall be hydraulically balanced and symmetrically plumbed through one or more "T" fittings, and that are separated by a distance of at least three feet in any dimension between the suction outlets, or be designed to use alternatives to suction outlets, including, but not limited to, skimmers or perimeter overflow systems to conduct water to the recirculation pump. (3) The circulation system shall have the capacity to provide a complete turnover of pool water, as specified in Section 3124B of Chapter 31B of the California Building Standards Code (Title 24 of the California Code of Regulations).
- (b) Suction outlets shall be covered with antientrapment grates, as specified in the ANSI/APSP-16 performance standard or successor standard designated by the federal Consumer Product Safety Commission, that cannot be removed except with the use of tools. Slots or openings in the grates or similar protective devices shall be of a shape, area, and arrangement that would prevent physical entrapment and would not pose any suction hazard to bathers. (Amended by Stats. 2012, Ch. 679, Sec. 2. (AB 2114) Effective January 1, 2013.)

HSC-115922.

(a)Section 115925, when a building permit is issued for the construction of a new swimming pool or spa or the remodeling of an existing swimming pool or spa at a private single-family home, the respective swimming pool or spa shall be equipped with at least two of the following seven drowning prevention safety features:

- (1) An enclosure that meets the requirements of Section 115923 and isolates the swimming pool or spa from the private single-family home.
- (2) Removable mesh fencing that meets American Society for Testing and Materials (ASTM) Specifications F2286 standards in conjunction with a gate that is self-closing and self-latching and can accommodate a key lockable device.
- (3) An approved safety pool cover, as defined in subdivision (d) of Section 115921.
- (4) Exit alarms on the private single-family home's doors that provide direct access to the swimming pool or spa. The exit alarm may cause either an alarm noise or a verbal warning, such as a repeating notification that "the door to the pool is open."
- (5) A self-closing, self-latching device with a release mechanism placed no lower than 54 inches above the floor on the private single-family home's doors providing direct access to the swimming pool or spa.
- (6) An alarm that, when placed in a swimming pool or spa, will sound upon detection of accidental or unauthorized entrance into the water. The alarm shall meet and be independently certified to the ASTM Standard F2208 "Standard Safety Specification for Residential Pool Alarms," which includes surface motion, pressure, sonar, laser, and infrared type alarms. A swimming protection alarm feature designed for individual use, including an alarm attached to a child that sounds when the child exceeds a certain distance or becomes submerged in water, is not a qualifying drowning prevention safety feature.
- (7) Other means of protection, if the degree of protection afforded is equal to or greater than that afforded by any of the features set forth above and has been independently verified by an approved testing laboratory as meeting standards for those features established by the ASTM or the American Society of Mechanical Engineers (ASME).

Per Municipal Code 13.20.060 Permanent water conservation requirements

New pools and spas required to have covers for water to prevent water evaporation. A cover must be installed when constructing a new pool or spa or when a city building permit is issued for repair or remodeling a pool or spa.

Per Municipal Code 8.52.020 Pool barriers.

- A. Every person owning land on which there is situated a pool which is eighteen (18) inches or more in depth at any point, shall erect and maintain thereon an adequate barrier sufficient to make such body of water inaccessible to small children. Such

barrier, including gates therein, shall not be less than five feet in height above any elevation within five feet of the barrier. Barriers shall not be climbable. Vertical members may have a spacing between them of not more than four inches and all horizontal members which provide a foothold shall be separated by not less than four feet vertically, unless on the pool side

of the barrier. Latching devices shall not be operable less than four and one-half feet above all elevations within five feet of an access.

B. All gates, doors, or other accesses through the barrier shall be self-closing and self-latching.

Exception: Except for doors from a garage, doors from the interior of a building need not have a self-closing device when an approved pool cover or other alternate method, that provides the same degree of protection, is approved by the building official.

C. Pools adjacent to or fronting on a body of water such as a lake or pond shall have a barrier on all sides except for the side or sides adjacent to the body of water. Side barriers shall extend four feet where possible. (Ord. 9631 § 2 (part), 1996)

Per California Electrical Code 2022

1. GFCI Protection: Outlets supplying pool pump motors connected to single-phase, 120-volt through 240-volt branch circuits, whether by receptacle or by direct connection, and all exterior outlet within 25 feet from pool shall be provided with ground-fault circuit interrupter protection for personnel. 2019 CEC 680.21(C)
2. If space limitations prevent underground wiring from being at least 5 feet away, wiring shall be permitted where installed in rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, reinforced thermosetting resin conduit, or type MC cable, suitable for the conditions subject to that location. Underground minimum cover depth shall be as given in table CEC 300.5 Per CEC 680.11
3. Metal within 5 feet horizontally from the inside wall or within 12 feet vertically above the maximum water level of the pool shall be bonded. Per CEC 680.26 All fixed metal parts shall be bonded. Bonded including, but not limited to, metal-sheathed cables and raceways, metal piping, metal awnings, metal fences, and metal door and window frames.
4. **Per CEC 680.26(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 exposes not less than 9 in² of surface area to the pool water all times. The conductive surface shall be located where it is not exposed to physical damage or dislodgement during usual pool activities, and shall be bonded in accordance with CEC 680.26(B)(SEE **EXAMPLE BELOW**)
5. Wall mounted luminaires in walls shall be installed with the top of the luminaire lens not less than 18 in. below the normal water level of the pool, unless listed and identified for use at lesser depths. No luminaire shall be less than 4 inches. CEC 680.23(5)
6. If property is within a flood zone area AE all the electrical equipment must be located 36 inches above the finish grade or 12 inches above the Based Flood Elevation (BFE) Elevation Certificate (EC) must be provided.
7. **POOL SHALL COMPLY WITH THE 2022 CEC ARTICLE 680**

2022 Building Energy Efficiency Standards.

Section 110.4 Mandatory Requirements for Pool and Spa Systems and Equipment

- (a) **Certification by manufacturers.** Any pool or spa heating system or equipment may be installed only if the manufacturer has certified that the system or equipment has all of the following:
1. Efficiency. For equipment subject to State or federal appliance efficiency standards, listings in the Commission's directory of certified equipment showing compliance with applicable standards; and
 2. On-off switch. A readily accessible on-off switch, mounted on the outside of the heater that allows shutting off the heater without adjusting the thermostat setting; and
 3. Instructions. A permanent, easily readable and weatherproof plate or card that gives instruction for the energy efficient operation of the pool or spa heater and for the proper care of pool or spa water when a cover is used; and
 4. Electric resistance heating. No electric resistance heating.

Exception 1 to Section 110.4(a)4: Listed package units with fully insulated enclosures, and with tight-fitting covers that are insulated to at least R-6.

Exception 2 to Section 110.4(a)4: Pools or spas deriving at least 60 percent of the annual heating energy from site solar energy or recovered energy.

- (b) **Installation.** Any pool or spa system or equipment shall be installed with all of the following:

1. **Piping.** At least 36 inches of pipe shall be installed between the filter and the heater or dedicated suction and return lines, or built-in or built-up connections shall be installed to allow for the future addition of solar heating equipment;
2. **Covers.** A cover for outdoor pools or outdoor spas that have a heat pump or gas heater; and
3. **Directional inlets and time switches for pools.** If the system or equipment is for a pool:
 - i. The pool shall have directional inlets that adequately mix the pool water; and
 - ii. A time switch or similar control mechanism shall be installed as part of a pool water circulation control system that will allow all pumps to be set or programmed to run only during off-peak electric demand period, and for the minimum time necessary to maintain the water in the condition required by applicable public health standards.

Section 110.5 Natural Gas Central Furnaces, Cooking Equipment, Pool and Spa Heaters, and Fireplaces: Pilot Lights Prohibited

Any natural gas system or equipment listed below may be installed only if it does not have a continuously burning pilot light:

- (a) Fan-type central furnaces.
- (b) Household cooking appliances.

Exception to Section 110.5(b): Household cooking appliances without an electrical supply voltage connection and in which each pilot consumes less than 150 Btu/hr.

- (c) Pool heaters.
- (d) Spa heaters.
- (e) Indoor and outdoor fireplaces.

680.9 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, overhead service conductors, and open overhead wiring, swimming pool and similar installations shall comply with the minimum clearances given in Table 680.9(A) and illustrated in Figure 680.9(A).

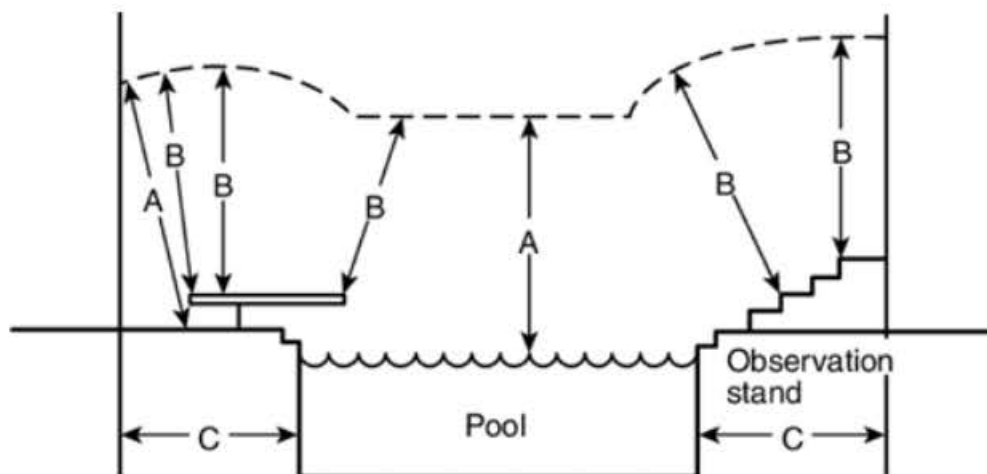


FIGURE 680.9(A) Clearances from Pool Structures.

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

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			
	m	ft	0 through 15 kV		Over 15 through 50 kV	
			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 and B of this table but not less than 3 m (10 ft).					

(B) Communications Systems

Communications, 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 680.9(A) for conductors operating at 0 to 750 volts to ground.

PoolBond PB-2008 Water Bonding Fitting
Follow these Important Safety Instructions

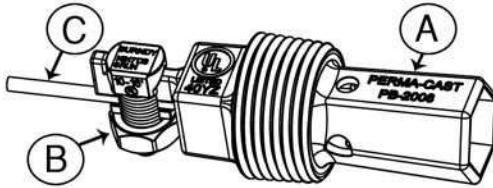


PoolBond
ELECTRICAL POOL BONDING



Part Number
PB-2008

Step 1 Components

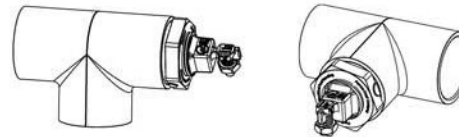


- A. PoolBond Casting Part Number PB-2008 with 1" NPT Pipe Thread.
- B. Split Bolt Connector, UL rated for Direct Burial.
- C. Solid #8 Copper wire, not supplied.

Step 2 Fitting Orientation

- Install in Pool Plumbing using a Plumbing Tee.
- Always install the Poolbond Tee with the fitting in horizontal or vertically down orientation to avoid trapped air in pool plumbing.

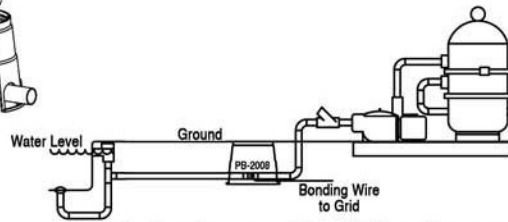
Horizontal
All Installations



Vertical Down
Above Ground Pools

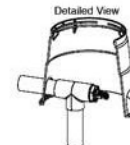
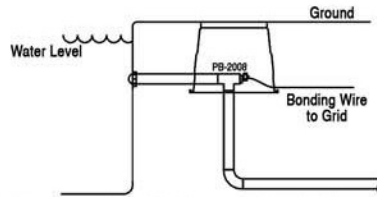


Step 3 Where to Install

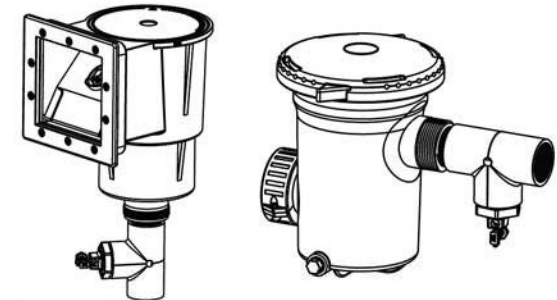


Installed near Pool Equipment — **OR** — Installed at Return Fitting

In-Ground Pools



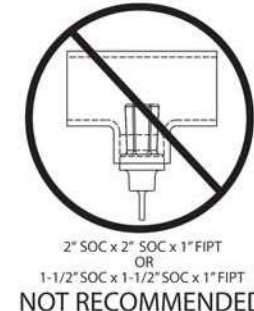
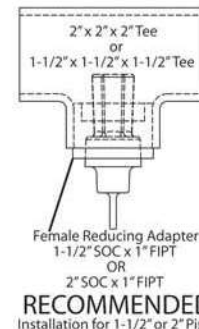
Above Ground Pools



- Install on In-ground & Above Ground Pools, Spas, Tubs, & Fountains.
- **DO NOT** bury the PoolBond fitting, it should be accessible for periodic inspection. A sprinkler valve box provides good access.
- **IMPORTANT** - Install PoolBond fitting at least 3" below water level to assure the fitting is contained in the pool water even when equipment is shut down.

Step 4 Installing PoolBond

- First, install the male threaded fitting in the threaded tee (dry fit) until the fitting just starts to tighten on the threaded tee. Count the number of turns it takes. Document this number and disengage the two parts.
- Apply thread sealant. Use Plumber Pipe Dope or Teflon Paste, do not use Teflon Tape.
- Reassemble the two parts using the number of turns recorded in the first step and tighten two more turns. Do not overtighten to avoid damaging plastic pipe.



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