

Swimming Pool Construction and Inspections



This bulletin highlights the important circulation outlet construction requirements for either a pool or spa, and then outlines the inspection process for pool construction.

CIRCULATION CONSTRUCTION REQUIREMENTS

Circulation outlets. The suction outlets of the pool or spa must:

- Have at least two circulation suction outlets per pump that are hydraulically balanced and symmetrically plumbed through one or more "T" fittings. There must be 3 feet of separation in any direction between suction outlets OR be designed to use alternatives to suction outlets, such as skimmers or perimeter overflow systems to conduct water to the recirculation pump.
- Have the capacity to completely turn over the water in: ½ hour or less for a spa or spray ground; one hour or less for a wading pool; two hours or less for a medical pool; and six hours or less for all other types of swimming pools.

Anti-entrapment grates. Cover the suction outlets with anti-entrapment grates, as specified in the ANSI/APSP-16 performance standard or successor standard designated by the Consumer Products Safety Commission, that cannot be removed except with the use of tools. Slots of openings in the grates or similar protective devices must be of a shape, area and arrangement that would prevent physical entrapment and would not pose any suction hazard to bathers. Any backup safety system that an owner of a new swimming pool or spa may choose to install in addition to the above requirements must meet the standards as published in the document, [Guidelines for Entrapment Hazards: Making Pools and Spas Safer](#). If altering an existing pool or spa, the work must include upgrading to include anti-entrapment grates, as specified in the ANSI/APSP-16 performance standard or successor standard designated by the Consumer Products Safety Commission.

INSPECTION REQUIREMENTS

Typically, inspections occur at seven junctures of the construction process. **It is vital that construction be performed in a manner and sequence that enables these inspections.**

<p>1. Underground Electrical Inspection - Occurs after installing the underground electrical conduits</p>
<ul style="list-style-type: none"> ▪ Leave all work completely exposed until after the inspection has been approved.
<p>2. Underground Plumbing Inspection - Occurs after installing gas and/or water lines and prior to backfill</p>
<ul style="list-style-type: none"> ▪ When gas lines are installed, they must be tested with air. The gas pipe must hold a minimum 10 psi for 15 minutes using a test gauge with 1/10 lb. increments. ▪ Ferrous gas pipe must be factory coated and all joints must be protected per UPC Installation Standards for Protectively Coated Pipe. ▪ Plastic gas pipe must be installed per UPC Installation Standards for Polyethylene (PE) for Gas Yard Piping. ▪ No gas piping shall be installed in or on the ground under any structure. ▪ See 2007 CPC section 1211.1.6 for complete details and exceptions.
<p>3. Pre-Gunite Inspection - Occurs after excavating the pool and installing all reinforcement steel</p>
<ul style="list-style-type: none"> ▪ Setbacks are checked and preliminary check of overhead wire clearances. ▪ Forming shells of light niche fixtures with extended raceway must be installed and bonded to the reinforcement steel; a minimum of four deck bond tails uniformly spaced around the perimeter of the pool will be checked, in addition to bond tails to forming shells and metal fittings.

REGARDING POOL PLUMBING SYSTEMS

Swimming pool plumbing systems are closed systems and are not regulated in the Plumbing Code. Therefore, they are not inspected by the City's Building Division. However, when a water pipe inlet is installed to re-fill a pool, it must comply with backflow requirements per the Plumbing Code (UPC).

FOR PUBLIC SWIMMING POOLS REQUIREMENTS, CONTACT:

Santa Clara County
Health Department
408-918-3400

San Jose Permit Center

San José City Hall
200 E. Santa Clara St.
San José, CA 95113
408-535-3555

www.sanjoseca.gov/building

4. Potting Inspection - Occurs after the pool is gunited

- Light fixtures on top of the pool deck coving will be checked.
- All light fixtures require a No. 8 copper insulated ground wire that must terminate at the inside of the forming shell.
- The ground terminal on the light fixture shell must be coated with a UL listed potting compound.
- Leave the potting compound package next to the light fixture; the Inspector will verify that it is an appropriate type.

5. Pre-Deck Inspection - Occurs after installing deck reinforcing steel and before placing pavers or concrete for the pool deck

- A main goal of this inspection and the key reason for grounding metal parts is to bring all metal parts around the pool to ground potential and thus reduce the threat of shock hazard.
- Pool deck steel reinforcement must be tied together with tie wires at all rebar intersections; ties must be wrapped tightly.
- Reinforcing steel or metal wire mesh must be bonded to bond coil originating from the forming shell.

Note: Code requires that all metal within 5 feet of the water's edge be bonded together unless separated by a permanent barrier. Examples of items that are required to be bonded include: pool equipment motors, metallic pool equipment (such as filter housing), steel rebar reinforcement, deck rebar steel, forming shells (housing light fixtures), diving boards, slides, ladders, pool cover motors, metallic fences, etc. Bonding clamps must be installed per their listing. Bonding clamps for direct burial or concrete encasement must be brass, copper, or copper alloy.

- *Note:* 2013 CEC requires an Equipotential Bonding Grid to extend under paved and unpaved walking surfaces for 3 feet horizontally beyond the inside walls of the pool. The acceptable grids around the perimeter of the pool are permitted to be any of the following:
 - a) Structural reinforcing steel rods in the deck must be minimum #3 rebar in an 18"X18" pattern at least 3 feet around the pool. The deck reinforcing steel rods must be bonded to the pool reinforcing steel with at least one #8 solid copper bonding jumper. OR
 - b) Wire mesh at least 3 feet wide around the perimeter of the pool. The wire mesh must be in the deck and bonded to the pool reinforcing steel with a #8 solid copper conductor at a minimum of four points uniformly spaced around the perimeter of the pool. OR
 - c) At least one #8 AWG bare solid copper conductor within 18 in. to 24 in. from the inside walls of the pool following the contour of the pool, securely fastened in place within 4 in. to 6 in below the grade. The perimeter surface copper conductor must be bonded to the pool reinforcing steel with a minimum of four #8 solid copper bond tails uniformly spaced around the perimeter of the pool.

6. Pre-Plaster Inspection

- This inspection verifies that all safety features of the pool, including the required enclosure, are complete before the pool is plastered and ready for water. If the pool project is complete, except for plastering, this will be the Final Inspection and the permit will be approved as Final and the inspection process will be complete.

7. Final Inspection - Occurs after all other inspections are signed off; may be concurrent with the Pre-Plaster Inspection.

Local and state codes are subject to change; verify the information of this bulletin with a city inspector or current codes.