



Building & Safety Division

Community Development Department
Hipolito Olmos, BO, Building Official
7351 Rosanna Street, Gilroy, CA 95020
Phone: 408 846-0451 Fax: 408 846-0429
Visit us: www.cityofgilroy.org

Residential Swimming Pool & Spa Submittal Guidelines Handout

POOL / SPA SUBMITTAL REQUIREMENTS:

This handout shall apply to any structure intended for swimming, recreational bathing, and ponds capable of containing water over 18 inches deep, including in-ground and above-ground pool structures, hot tubs, spas, portable spas, fish ponds and non-portable wading pools.

Provide a scope of work, north arrow, and note on the plans that all work shall comply with 2016 California codes.

THREE (3) PLOT PLANS:

Plot plans should clearly show pool equipment, 5 foot minimum distance from property lines, 3 feet minimum distance to any structures, etc. If 3 feet is interrupted by a permanent wall or building 5 feet in height or more, 3 feet can be reduced. Show all easements for utilities such as phone lines, power lines and any other public easements on the plot plan. Clearly show the location of the two minimum pool safety measures provided in compliance with page 4. (Enclosure & Safety Devices)

TWO (2) SETS OF STRUCTURAL & ENGINEERING PLANS:

These plans show all structural elements of the pools construction including rebar placement and size, Guniting thickness, piping placement, etc. Both the plans and the Engineer's calculations must be "wet signed" and stamped by the Engineer.

SUBMITTAL CHECKLIST:

ELECTRICAL:

- Provide sufficient general and specific electrical notes within the plan set to fully identify and demonstrate all electrical equipment, receptacles, lighting, grounding, and bonding per Article 680 of the 2016 California Electrical Code.
- Show location of all exterior outlets, receptacles, and lighting within the plan set.
- One GFCI receptacle must be located between 6'-20' of edge of water (CEC 680.22.(A)(1)).
- Outlets supplying pool pump motors from branch circuits of 15 or 20amps, whether by receptacle or direct, shall be provided with GFCI protection. Outlet shall be rated weather resistant WR with an approved rated in use cover installed per CEC 406.9.
- Identify all conduit, conductor size, wire/type and installation depth for all proposed electrical. Provide load calculations to verify capacity.
- A single line diagram is required when adding a sub-panel. Provide location and size of existing service panel and any new sub-panel.
- Show location of pool equipment disconnect and sub-panel and show 36 inches of working clearance.
- Overhead utility/service lines must comply with CEC Table 680.8 for Overhead Conductor Clearances. If none exist, please state clearly on the site plan.
- The electrical disconnect for the pool equipment must be installed a minimum of 5 feet from the inside wall of the pool and spa and shall be in sight of the pool equipment.
- Show the method of providing equipotential bonding grid, pool water, bond pool equipment, ect.
- Bonding of perimeter surfaces shall be bonded to the pool reinforcing steel or copper conductor grid at a minimum of 4 points uniformly spaced around the perimeter of the pool. CEC 680.26 (B)(1-7).

- Bonding of the perimeter surfaces shall be accomplished with a minimum #8 AWG bare solid copper conductor and be attached with an approved clamp. CEC 250.8.
- Where structural reinforcing steel isn't available, equipotential bonding can be with a #8 AWG bare solid copper conductor following the contour of the perimeter surface, located between 18 inches and 24 inches from the inside walls of the pool. CEC 680.26 (B)(2)(b)(4).

BONDING OF FIXED METAL PARTS:

- All fixed metal parts within 5 feet of the inside wall of the pool and less than 12 feet vertically above the maximum water level must be bonded to the equipotential grid. CEC 680.26(B)(7)
- Examples: Metal-sheathed cables and raceways, Metal Piping, Metal Awnings, Metal Fencing, Metal Doors or Window Frames.
- Metal Fittings: All metal fittings within or attached to the pool structure shall be bonded. Isolated parts that are not over 4 inches in any dimension and do not penetrate into the pool structure more than 1 inch shall not require bonding. CEC 680.26 (B)(5).
- Electrical equipment associated with pool water circulation shall be bonded: CEC 680.26(b)(6). Such as Pump Motors, Metal parts of pool cover equipment & Electric Motors.
- If a double insulated Water Pump Motor is provided, a solid #8 AWG copper conductor still needs to be provided for a replacement motor in the future. CEC 680.26(B)(6)(a).

POOL WATER BONDING:

- Where none of the bonded parts is in direct connection with the pool water, the pool water shall be indirect contact with an approved corrosion-resistant conductive surface that's at least 9 square inches must be installed and be in contact with the water at all times. CEC 680.26(C).

PLUMBING / MECHANICAL:

- Provide manufacture's equipment specifications for all heaters and pumps including listing information.
- Provide gas calculations for all installed / future BTU demand, type of material, and length of pipe, size of pipe and trench depth.
- For a proposed pool heater, BBQ, gas fire pit or fire feature. Identify the location and provide the appliance / equipment shutoff valve approval listing number.
- Please note on plan, "All equipment shall be seismically anchored."
- Show the location of the anti-entrapment / vortex covers meeting current standards of the ASTM or ASME.
- Identify a minimum 3 feet separation between all drains and note hydraulically balanced.
- Any pool equipment must be a least 4 feet from any operable window, door or air inlet into the building.
- Spa shall have 1 drain shown on the bottom and 1 drain on the side where 3 feet separation requirements on the bottom cannot be met.
- Show location of pool fill valve with anti-siphon device.
- All swimming pools, spas, and hot tubs shall have at least two circulation drains per pump that shall be hydraulically balanced and symmetrically plumbed through one or more "T" fittings that are separated by a distance of at least 3 feet in any dimension between the drains. Suction inlets that are less than 12 inches across shall be covered with an anti-entrapment grate that cannot be removed. All swimming pools, spas and hot tubs will need to have anti-entrapment covers installed over any suction inlet/drain whenever new pools are installed or to existing pools that are modified. (2016 CBC Section 3109.4.4.8)

- If thermal solar heating is to be installed, provide manufacture's installation instructions.

GLAZING REQUIREMENTS:

Section 2406.4.5 (CBC 2016 Edition) requires safety glazing in windows and doors or walls and fences used as the barrier for indoor or outdoor swimming pools or spas when BOTH of the following conditions are present.

- 9.1 The bottom edge of the glazing is less than 60 INCHES above the walking surface on the poolside of the glazing.
- 9.2 The glazing is within 5 FEET of the swimming pool or spas water's edge.

NOTE: The intent is to prevent human impact to the glazing resulting from wet walking surfaces due to pool activity.

POOL / SPA / HOT TUB ENCLOSURE AND SAFETY DEVICES:

California Building Code Section 3109
City of Gilroy Zoning Ordinance Section 34.23
Health & Safety Code 115920 through 115929
Consumer Product Safety Commission (CPSC)

As of January 1, 2018, new and remodeled pool owners will **need to install at least 2 of 7** specified drowning prevention safety features to reduce the serious risk of drowning.

1. An enclosure that meets the requirements of Section 115923 and isolates the swimming pool or spa from the private single-family home. An "Enclosure" means a fence, wall, or another barrier that isolates a swimming pool from access to the home. Compliance with this section includes, but is not limited to, the following:
 - Any access gates through the enclosure must open away from the swimming pool, and must be self-closing with a self-latching device placed no lower than 60 inches above the ground.
 - The enclosure must be a minimum height of 60 inches.
 - Access gates shall open away from the pool and have a self-closing, self-latching device located no lower than 60 inches above the ground; barrier shall have no openings within 18 inches of the release mechanism.
 - The maximum vertical clearance from the ground to the bottom of the enclosure shall be no more than 2 inches to rough grade and no more than 4 inches to hardscape.
 - Any gaps or voids in the enclosure shall not allow passage of a sphere equal to or greater than 4 inches.
 - The outside surface shall be free of protrusions, cavities, or other physical characteristics that would serve as handholds or footholds that could enable a child below the age of five years to climb over the enclosure.
 - The enclosure shall isolate the swimming pool or spa from the private single-family home. [Health and Safety Code 511922 (a)(1)]
2. A 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. Compliance with this code includes, but is not limited to, the following:
 - The top of a fence or wall used as a barrier needs to be a minimum of 48 inches above the exterior side of the barrier.
 - The access gate opens away from the swimming pool.

- There will be a clear zone of at least 20 inches between the barrier and swimming pool.
 - The gate is self-closing, and self-latching and the latch is placed no lower than 54-inches above the ground. The gate is hinged, and the latch is placed on the outside of the gate.
 - The fence height on both sides of the grade will be above 48 inches.
 - The vertical clearance from the grade to the enclosure bottom will not exceed 1 inch.
 - Gaps and Voids within the fence will not allow passage of a sphere equal or greater to 4 inches.
 - The fence surface will be free of protrusions, cavities and other characteristics that would serve as a handhold or foothold. The distance between the vertical poles is sufficient to hinder a child's ability to climb.
3. An approved safety pool cover, as defined in subdivision (d) of Section 115921. This is an ASTM F1346-91 compliant automatic or manual pool cover. Compliance with this code includes, but is not limited to, the following:
- The static load test for weight support. The cover should be able to hold a weight of at least 485lbs (the estimated average weight of 2 adults and one child) to permit rescue operation.
 - Perimeter Deflection Tests for entry or entrapment between the cover and the side of the pool. The cover must demonstrate that any opening is sufficiently small and strong enough to prevent the test object being passed through.
 - The Surface Drainage Test that safeguards against a dangerous amount of water collecting on the cover's surface.
 - Labeling requirements must include basic consumer information such as the warranty information, the appropriate warnings as described in the standard and acknowledge the product as a safety cover.
 - Covers used to satisfy the barrier/fence requirements should meet all the requirements and performance standards of the American Society for Testing and Materials (ASTM) standard F1346-91. Documentation shall be provided at the time of permit application.
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." Exit alarms are also required on ANY door or window that permits access from the residence to the pool area without an enclosure between the pool and the home. The exit alarm must make a continuous audible sound when the door or window is open and or ajar.
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; this is ANY door opening on to the pool area, sliding or otherwise.
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.

Compliance with this code includes, but is not limited to, the following:

- The alarm shall sound within 20 seconds both at the pool and within the residence via a remote receiver.
 - The operational condition of the alarm shall be made known by means of an energized lamp at a distance of 10 feet +/- 1 foot and specified at a specified angle of view (45 degrees from perpendicular +/- % degrees).
 - The alarm shall be capable of providing a sound pressure level of not less than 85 DBA.
 - If the alarm is battery operated, there must be a low-battery indicator.
 - The alarm must automatically reset.
 - Wireless alarms must be FCC Part-15 compliant.
 - If the alarm deactivates or has reduced sensitivity due to environmental factors, the alarm must provide a visual and audible warning.
 - If a portion of the house or garage is used as part of the barrier or fence, that portion shall have alarms on all the doors giving direct access to the pool area.
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).

NOTE:

Prefabricated fiberglass in-ground pools must have barriers and alarms installed and operational and inspected for approval immediately after excavation and prior to installation of pool. Additionally, prefabricated swimming pools in which the pool walls are entirely above adjacent grade and are in excess of 5,000 gallons must have barriers and alarms installed and operational and inspected for approval prior to filling pool with any water.

TITLE 24 ENERGY INFORMATION:

Before any pool or spa heating system or equipment may be installed, the manufacturer must certify to the Energy Commission that the system or equipment complies with §110.4 and §110.5. Provide the completed CF2R-PLB-01-E Title 24 energy form along with submitted plans.

NOTE: CF2R-PLB-03-E form must be submitted to inspector at time of Final Building inspection.

NATURAL GAS APPLIANCE REQUIREMENTS:

Any equipment installed must meet the requirements of Section 110.5.

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

- Pool heaters.
- Spa heaters.
- Patio Heaters
- Fire Feature.
- BBQ

POOL COVER / POOL PUMP OPERATIONAL REQUIRMENTS:

Mandatory requirements for pool and spa heating systems and equipment for all occupancies in accordance with 2016 CA Energy Standards Section 110.4.

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. A thermal efficiency that complies with the Appliance Efficiency Regulations; 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; and
5. 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.
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; and
2. Covers. A cover for outdoor pools or outdoor spas that have a heat pump or gas heater.
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 the off-peak electric demand period and for the minimum time necessary to maintain the water in the condition required by applicable public health standards.

INSPECTION SEQUENCE

Pre-site Pool Inspection:

Inspector will verify that the submitted plans accurately reflect the proposed installation of the pool and all associated equipment. Contractor shall be responsible for marking the outline of proposed pool and all associated equipment. This is normally done using spray paint. Verify that there are no overhead power lines within 22.5 feet above the proposed water surface, 14.5 feet above the proposed diving board or other raised platform if to be installed. CEC 680.6

Inspection item to call in is #100 on permit card.

Pre-Gunite, Steel / Bond:

During this inspection, City staff will verify that steel placement is in accordance with the approved plans, ensure there is a minimum of 3 inches clearance between the rebar and the earth, rough electrical including trenches and bonding, rough plumbing including trenches, pressure test and gas lines shall be inspected.

Inspection items to call in are #250, #255, #260, #370 on permit card.

Swim Pool Pre-Deck:

During this inspection, City staff will verify equipotential bonding grid is present.

Ensure bond wire is clamped to the deck bond grid with an approved clamp to be buried in concrete and connected to rebar. Inspectors will verify that the area surrounding the pool is complete and ready to accept the application of the pool deck.

Inspection item to call in is #375 on permit card.

Pre-Plaster / Fence/Pool Barrier / Alarm Safety Inspection:

Prior to releasing the pool for plastering, City staff will verify all elements of construction and life safety are in place and functional.

Designers, contractors and inspectors, please note:

Field verify that no equipment, climbable landscaping feature, water slides, or other similar play equipment is within 4'-0" radius of the pool barrier fence top. Pool Heater vents should terminate at least four (4) feet from property line. The electrical system should be completed, including all terminations and installed OCPD's.

Inspection item to call in is #385 on permit card.

Final Inspection:

At time of the final inspection the swimming pool must be full of water.

It will be the responsibility of the pool contractor to furnish the pool owner with a pool cover in compliance with the 2016 California Energy Code section 110.4(b)(2) for outdoor pools or outdoor spas that have a heat pump or gas heater.

Verify Smoke Alarms and Carbon Monoxide Detectors are present where required and in working order.

Inspection items to call in are #935, #950, #960, #995 on permit card.

NOTE: After completion of the final inspection, (#995) City staff will NOT visit the site again. At this point the pool will be deemed finished and complete.