

SWIMMING POOLS SPAS & HOT TUBS

(PLEASE NOTE: These are general guidelines, not to be used in lieu of actual code requirements for final design. Your final design will be subject to plan review.)



**BUILDING & SAFETY DIVISION
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DIGALERT

800-227-2600
Call 2 Full Working Days In Advance

PURPOSE:

This user guide describes the City of La Habra's requirements for the construction or installation, and demolition of swimming pools, spas and hot tubs.

FEES AND PLAN REVIEW

Plan review fees shall be paid at the time of submittal. Fees are based on the valuation of the work. Engineering and N.P.D.E.S. plan check fees may also apply.

Permit fees and other required fees are collected at the time of permit issuance.

Procedures:

1. Prior to the installation or construction of a pool, spa or hot tub, you should verify all usable yard area and setback requirements. Do so by submitting a scaled plot plan showing the proposed location of the pool, spa or hot tub and all yard dimensions including setbacks. The plan should also show the location of the proposed mechanical equipment, along with its planned setback from property lines and adjacent walls.
2. Check with the Engineering Division for possible easement issues.
3. If you live in an area with a Homeowners' Association, please submit plans to your H.O.A first, for approval, then submit H.O.A approved plans to the city.
4. For a building permit to be issued, the contractor must have a current and valid contractors' license and city business license.

BUILDING PERMIT REQUIREMENTS

The following plans and information are needed by the Department of Community Development for plan check review:

Three copies of a scaled plot plan with the following information:

- a. Name of property owner.
- b. Street address and county assessors parcel number (A.P.N.) of property involved. Street address must also be included on engineer plans.
- c. Lot dimensions, boundary lines and any easements on the property.
- d. Yard setbacks, dimensions and location of proposed pool and necessary mechanical equipment. The location, height, design and materials of required fencing, gates and mechanical equipment screening.
- e. The location, height, type and intensity of exterior lighting, if any.
- f. Foundation and pool construction design specifications, as required by the Building Official (i.e. footing details, reinforcement and engineering calculations), stamped and wet signed by the Engineer or Architect.
- g. Footprint of the building showing the location of all window and door openings which lead into the pool area. Additionally, show the location of all windows, doors and patios within ten (10') feet of the pool pump and heater.
- h. A signed Pool Construction form must be submitted with plans.
- i. Homeowners Association approval (if applicable).
- j. Location of overhead wires, if any, location of service pole, and meter.
- k. Location of drain to sewer/p-trap.
- l. Show yard drainage to curb (i.e. deck drains, yard catch basins, and drainage thru curb).

GENERAL REQUIREMENTS

The following is a summary of the usual requirements for pools, spas and hot tubs. Additional requirements are found in the International Swimming Pool and Spa Code (2012), California Building Code (2016), California Plumbing Code (2016), California Mechanical Code (2016), California Electrical Code (2016), State of California Energy Efficiency Standards (latest edition), and modifications contained in the City of La Habra ordinance.

Setback Requirements – Pools, spas or hot tubs must maintain a minimum of five (5') feet from the edge of water to any side or rear property line and shall maintain the same front yard setback as specified in the Zoning Ordinance for the principal building on the lot. Pools, spas and hot tubs must be surrounded by a (5') foot tall barrier; therefore they shall be located in an area that the zoning ordinance will allow (5') foot fencing. The pool shall be constructed no less than seven (7') feet from the top of a slope and not less than five (5') feet from the toe (bottom) of a slope.

CONSTRUCTION REQUIREMENTS

Structural:

1. All pool construction shall be in conformance with engineered design for expansive soils, unless a soils report by a registered engineer approved by the Building Official indicates otherwise.
2. Continuous inspection by a special inspector shall be required on all pools constructed of reinforced gunite, or reinforced cast-in-place concrete. The building inspector shall ensure that all required reinforcing steel and diving board or slide anchor bolts are properly connected.

Plumbing:

1. Provide a three (3") inch P-Trap for backwash of filter and connect to the house sewer line. Spas must have either a P-Trap, cartridge type filter or separation tank. A length of thirty six (36") inches of copper plumbing from the heater output is required, or manufacturer's installation requirements, to allow for future addition of solar heating. P.V.C. water and air lines must be painted or treated to protect them from ultraviolet rays. Swimming pools shall be equipped with directional inlets, which provide for adequate mixing of the pool water. A time clock shall be installed on pool circulation pumps. The drain shall have anti-vortex or approved covers.
2. Waste Water Disposal: No direct or indirect connection shall be made between any storm drain, sewer, drainage system, seepage pit, underground leaching pit, or subsoil drainage line, or any line connected to a swimming pool, unless approved by the Building Official. Waste water from any filter, scum filter, scum gutter, overflow, pool emptying line or similar apparatus or appurtenance shall discharge into an approved type receptor by air gap and subsequently into public sewer. The flood level rim of such receptor shall be at least six (6") inches above the flood level of the adjacent ground. Each such receptor, when permitted to be connected to any part of a drainage system shall, be provided with an approved three (3") inch trap.
3. Gas Lines: Buried polyethylene gas lines shall be eighteen (18") inches below grade with minimum #14 AWG copper tracer wire. Polyethylene plastic gas piping must be identified with the manufacturer's name or trade mark and the words "Natural Gas". Transitions from plastic to metal screw pipe shall be made by using approved transition fittings only. polyethylene gas piping shall be schedule 40, including plastic fittings. Before any appliances are connected to the system, an air pressure test and inspection at ten (10) pounds for fifteen (15) minutes is required. Gas shut-off valve shall be within thirty six (36") inches of equipment.

Electrical:

1. Lights, receptacles and switches: Provide Ground Fault Circuit Interrupter (G.F.C.I.) for pool lights and receptacles. At least one receptacle shall be installed a minimum of ten (10') feet and not more than twenty (20') feet from the inside wall of a permanently installed pool. All receptacles located within twenty (20') feet of the inside walls of a pool shall be protected by G.F.C.I. Electrical conduit (P.V.C.) shall be eighteen (18") inches below finish grade and six (6") inches when below concrete. Above grade conduit must be approved for above grade installation, whether of plastic or rigid galvanized steel. Wall switches must be located at least five (5') feet from the inside of walls of the pool, spa or hot tub.
2. Grounding: The following equipment shall be grounded:
 - a. Wet-niche underwater lighting fixtures
 - b. Dry-niche underwater lighting fixtures
 - c. All electric equipment located within five (5') feet of the inside wall of the pool
 - d. All electric equipment associated with the re-circulating system of the pool
 - e. Junction boxes
 - f. Transformer enclosures
 - g. Ground-fault circuit interrupters
 - h. Panelboards that are not part of the service equipment and that supply any electric equipment associated with the pool.

Grounding must conform to all of the applicable code requirements of the 2016 California Electrical Code (CEC).

3. Bonding: Bond all metal parts of the pool with pressure connectors and a bare copper #8 solid conductor, continue to the pool pad and connect to all pool pad motors and equipment. Cast brass or bronze ground clamps shall be used to connect copper conductors to metal parts.

The following parts shall be bonded together:

- a. All metallic parts of the pool structure, including the reinforcing metal of the pool shell, coping, stones, and deck.
 - b. All forming shells and metal screens.
 - c. All metal fittings within or attached to the pool structure.
 - d. Metal parts of electric equipment associated with the pool water circulating system, including pump motors.
 - e. Metal parts of equipment associated with pool covers including electric motors.
 - f. Metal-sheathed cable raceways, metal piping, and all fixed metal parts that are within twelve (12') feet above the maximum water level of the pool, or any observation stands, towers or platforms, or from any diving structures, that are not separated from the pool by a permanent barrier.
4. Section 680.8 and Table 680.8: Clearance of conductors to top of water surface shall be twenty-two feet and six inches (22'.6"). Horizontal clearance from edge of water must be ten (10') feet.

BARRIER REQUIREMENTS

Drowning is the leading cause of accidental death for children under five (5) years of age in California. Over 4,600 drowning and near drowning incidents occur nationwide each year in private swimming pools. The use of effective residential swimming pool barriers in conjunction with adult supervision is the best way to minimize these accidents.

An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following:

1. The top of the barrier shall be at least sixty (60") inches above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be two (2") inches measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, the barrier may be at the ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be four (4") inches.
2. Openings in the barrier shall not allow passage of a four-inch diameter (4") sphere.
3. Solid barriers which do not have openings, such as masonry or stone walls, shall not contain indentations or protrusions except for tooled masonry joints.
4. Where the barrier is composed of horizontal members (cross rails) and the horizontal spacing is less than forty five (45") inches, the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed one and three fourths (1 $\frac{3}{4}$ ") inches in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed one and three fourths (1 $\frac{3}{4}$ ") inches in width.
5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members (cross rails) is forty five (45") inches or more, spacing between vertical members shall not exceed four (4") inches. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed three fourths (3/4") inches in width.
6. Where the barrier is composed of diagonal members, openings shall be no more than one and three fourths (1 $\frac{3}{4}$ ") inches.
7. Access gates shall comply with the requirements of items 1 through 7 and shall be equipped to accommodate a locking device. Pedestrian-access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than sixty (60") inches from the bottom of the gate, the release mechanism shall be located on the pool side of the gate at least three (3") inches below the top of the gate and the gate and barrier shall have no opening greater than one half (1/2") inch within eighteen (18") inches of the release mechanism.
8. Where a wall of a dwelling serves as a part of the barrier, doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and its screen, if present, are opened. The alarm shall sound continuously for a minimum of thirty (30) seconds immediately after the door is opened, and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as a touchpad or switch, to temporarily deactivate the alarm for a single opening. Such deactivation shall last for no more than 15 seconds. The deactivation switch shall be located at least fifty four (54") inches above the threshold of the door. Other means of protection, such as self-

closing doors with self-latching devices approved by the Building Official, shall be acceptable so long as the degree of protection afforded is not less than the protection afforded by the alarm system described above.

EXCEPTIONS: The alarm may be deleted if a locking device is installed sixty (60") inches above the walking surface and it automatically engages when the door is closed. The alarm may be deleted when a fence of not less than four (4') feet in height is provided in addition to the perimeter barrier described in the section. The additional fence must comply with all perimeter fence criteria except for height requirements.

9. Where an above ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then the means of access (the ladder or steps) shall be surrounded by a barrier which meets the requirements of items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a four (4") inch diameter sphere.

Indoor Swimming Pool - Doors with direct access to an indoor swimming pool shall comply with section 9 above.

Withholding Approval - Plaster inspection or approval to fill a pool or spa with water shall be withheld by the Building Official until there has been compliance with all fencing and other requirements of this section.

EQUIPMENT REQUIREMENTS:

All mechanical equipment shall be set on a concrete pad above grade. The manufacturer's installation instructions shall be available on the job site for inspection. Clearance to any building wall shall be per manufacturer's installation instructions and listings or a minimum of 3 feet. All mechanical equipment shall be screened from the public view through the use of walls, fencing and/or landscaping. Such equipment may be located within a required side or rear yard, subject to the following limits per the City amendments to the Uniform Swimming Pool, Spa and Hot Tub code:

1. The pump/filter may be located in a side yard provided it is at least three (3') feet away from the dwelling exterior wall and at least ten (10') feet away from an existing dwelling window and/or enclosed patio located on the neighboring property. This provision is to attenuate noise to a reasonable level.
2. The gas fuel fired heater may be located within the side yard setback, provided it is located at least three (3') feet away from an exterior wall of the dwelling, and ten (10') feet from an HVAC air intake, window, greenhouse or enclosed patio (on the neighboring property). A gas fuel fired water heater may be located within a rear yard area, provided that a minimum of three (3') feet is maintained to the property line. The heater shall be installed with clearance as listed by the American Gas Association or Underwriters Laboratories. The minimum clearance is three (3') feet to any fence or wall.

LIGHTING – Any lighting used to illuminate the swimming pool area shall be designed and shielded to confine all direct light rays to the subject property, minimizing spill-over light onto adjacent properties.

ENERGY EFFICIENCY REQUIREMENTS:

- A. The manufacturer of pool or spa heating system or equipment must certify to the California Energy Commission that their product complies with the California Energy Code, Sections 114 and 115.

- B. The applicant must provide the pool water volume and the pool filtration flow rate. As required in Section 150 of the California Energy Code, the filtration flow rate may not be greater than is required to turn over the pool water volume in 6 hours, or 36 gpm, whichever is greater.
- C. The pool is required by Section 114 of the California Energy Code to have directional inlets that adequately mix the pool water.
- D. Outdoor pools and spas with gas or electric heaters must have insulated covers, and the cover must be in place at the final inspection, as also required by California Energy Code, Section 114.
- E. Plans must specify that natural gas fired pool or spa heaters may not have continuously burning pilot lights. (California Energy Code, Section 115).
- F. Pool water circulation motors (including all pumps for any auxiliary loads) must be equipped with a time switch or similar control mechanism that will allow pumps to be set to run only at off-peak electric demand periods and for the minimum time necessary to maintain the water in the condition required by applicable public health standards (California Energy Code, Sections 110.4 and 110.5).
- G. Pool pumps for filtration which also have auxiliary pool loads must have either a multi-speed motor or a separate motor for each auxiliary load (California Energy Code, Section 150).
- H. All pool filtration pump motors with a capacity of 1 hp or more must be multi-speed motors (California Energy Code, Section 150).
- I. Pool piping and fittings must be sized according to the maximum flow rate required for filtration and all auxiliary loads. Please specify pipe sizes, lengths, and fitting types to demonstrate compliance. A properly completed Installation Certificate CF-6R-MECH-03 (available on the California Energy Commission web site) will be required to demonstrate compliance at final inspection.

POOL DEMOLITION REQUIREMENTS:

- a. Obtain a demolition permit and cap off sewer, gas, and electrical lines.
- b. Install holes in bottom of pool 12 inches square in four places for water drainage.
- c. Tear back pool rim and remove top part of pool down 24 inches.
- d. Obtain soils report from a licensed soils engineer for soil compaction.

POOL REMODEL:

Permit required for:

- a. Re-plaster
- b. Re-tile
- c. Grounding connections for re-wiring
- d. Re-Plumbing (Including installation of anti-entrapment drain covers)

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Permit required. Must submit the following information for review and approval:

- a. Scaled Site Plan
- b. Product Evaluation Report & Product Installation Instructions
- c. Listing Agency Report (such as IAPMO, ICC etc.)

SWIMMING POOL AND SPA ENTRAPMENT HAZARDS

The Consumer Product Safety Commission staff estimates that each year nearly 300 hundred children under 5 years old drown in swimming pools, and hospital emergency room treatment is required for more than 3,100 children under 5 years old who were submerged in residential pools.

All of us are aware of the drowning hazard that swimming pools and spas pose for young children, but many are not aware that older swimming pools and spas can present a drowning hazard even for older children and adults due to entrapment hazards. Entrapment can occur when hair gets entangled in a suction outlet, limbs get stuck in a drain or the body is held against a suction outlet and forms a seal.

Some older swimming pools and spas are equipped with only one main drain resulting in a very high suction force. There are some approaches to limit this hazard as described below.

To minimize the risk of entrapment:

- No swimming pool or spa should be operated if any of the covers of the suction outlets, including main drains, are missing damaged or not secured.
- Drain covers should display markings for maximum flow rate and a statement that the cover has been tested and certified to comply with ANSI/ASME Standard A112.19.8M, commonly referred to as anti-entrapment covers. Replacement drain covers are available for many installations.
- For manufactured in ground or above ground spas, check with the manufacturer to determine if a recall has been issued for the drain or filter outlets.
- If there is only one main drain, another drain can be plumbed and spaced at a sufficient distance to ensure that an individual cannot block both drains. Both drains then need to be covered with anti-entrapment covers.
- Atmospheric vents may be a solution by breaking the vacuum at a suction outlet once entrapment occurs. These devices should be properly designed and installed by a licensed installer.
- Listed Safety Vacuum Release Systems (SVRS) can be installed that sense an increase in pump suction vacuum and open to the atmosphere to release the suction force.

If you are unsure if your swimming pool or spa presents an entrapment hazard, please contact a swimming pool professional for an assessment.

N.P.D.E.S.

All construction project proponents are responsible for implementing BMP's (Best Management Practices) to assure compliance with the Water Quality Ordinance and, where applicable, the Grading Ordinance. A construction project for purposes of these requirements is any site for which building or grading permits are issued and where an activity results in the disturbance of soil such as soil movement, grading, excavation, clearing, road construction, structure construction or structure demolition; and sites where uncovered storage (stockpiling) of materials and wastes such as dirt, sand or fertilizer occurs; or exterior mixing of cementaceous products such as concrete, mortar or stucco will occur. In general, construction activities require the implementation of a combination of BMP's to control erosion and sediment transport, and pollutants from materials and waste management storage and activities.

Permits obtained between October 1 and April 30 (rainy season) will be subject to an NPDES inspection and fee per rainy season. Please contact the city's NPDES coordinator (562-383-4151) for further information.

NON-STORMWATER DISCHARGES FROM A CONSTRUCTION SITE TO THE MUNICIPAL STORM DRAIN SYSTEM OR RECEIVING WATERS ARE PROHIBITED.



POOL CONSTRUCTION

Building & Safety Division

PROJECT ADDRESS: _____

IMPORTANT NOTES:

- **A pre-site inspection is required for all swimming pools. The location of all swimming pools must be approved prior to any excavation.**
- Barriers for all permanently installed swimming pools shall be a minimum five (5) feet high **measured on the side of the barrier that faces away from the swimming pool. The inspector will measure the height of the barriers from all adjacent properties to verify that they conform to all the building code regulations.** The barrier shall not have any protrusions, indentations, cutouts, or other characteristics which would make the barrier easily climbable.
- All gates providing access to the pool area shall be self-closing and self-latching and open away from the swimming pool. The latch shall be located on the gate, at least sixty (60") inches high.
- All doors with direct access to the pool area shall have door alarms that automatically reset (no on/off switch).
- Windows/glazing within five feet from the water's edge must be tempered glass.
- At least one G.F.C.I. protected outlet shall be provided, minimum ten feet away, but no more than twenty feet from the water's edge. Outlets on the back of the house closer than ten feet from the water's edge must be relocated.
- A special inspection is required for gunite.
- A four (4) inch sand or crushed rock base is required under all concrete slabs. A pre-slab inspection is required, with all steel (rebar/wire mesh, post bases, etc.) With five (5) feet of the water's edge bonded to "bonding grid".
- All approvals are subject to field inspections and must conform to all applicable codes and ordinances.
- No pool shall be placed under existing service drop conductors or any other open overhead wiring unless the water level of the pool, the base of the diving platforms and the area extending ten (10) feet horizontally from the inside of the walls of the pool, are at least twenty-two feet and six inches (22'-6") below such wiring.
- Suction outlets that are less than 12 inches across shall be covered with antientrapment grates, as specified in ASME/ANSI standard a 112.19.8 that cannot be removed except with the use of tools.

I have read and understood all of the above requirements for pool construction and placement and I agree that I will fully comply with each and every one of these requirements and all other requirements in federal, state or local statutes or ordinances for pool construction and placement prior to any final approval of this project for connection to utilities.

*****POOL CONTRACTOR AND HOME OWNER MUST SIGN POOL CONSTRUCTION HANDOUT AND SUBMIT PRIOR TO ISSUANCE OF PERMIT.*****

OWNER: _____

CONTRACTOR: _____