



DESIGN AND CONSTRUCTION OF SWIMMING POOLS			
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City of Los Angeles – Department of Building & Safety
DESIGN AND CONSTRUCTION OF SWIMMING POOLS

I. Purpose

This Information Bulletin establishes consistent and uniform requirements for the design and construction of swimming pools, based on the State and City requirements. Currently, the provisions for the design and construction of swimming pools are regulated as follows:

- The State provisions for Public Swimming Pools are found in the [2025 California Building Code \(CBC\)](#) Chapter 31B.
- The [Los Angeles Municipal Code \(LAMC\)](#) sections, amending the 2025 CBC, 91.3109, 91.6109, and 91.8118 shall apply to all pools, unless otherwise stated in this Information Bulletin.

II. Definitions

Pool: A constructed or prefabricated artificial basin, chamber or tank intended to be used primarily by bathers, and not for cleaning of the body or for individual therapeutic use. Includes in-ground and above-ground pools and includes, but need not be limited to hot tubs, portable and non-portable spas, and wading pools. (CBC 202)

Private Swimming Pool (Private Pool): Any constructed pool, permanent or portable, that is intended for noncommercial use as a swimming pool by not more than three owner families and their guests. (CBC 202)

Public Swimming Pool (Public Pool): Any pool other than a private pool. (CBC 202)

Pool Enclosure: A fence and gate complying with all requirements of CBC Sections 3109, 3119B, LAMC 91.3109, and Section IV below and the walls of a building which serves as part of the enclosure around the pool.

III. Pool – General Requirements

1. Permit Requirements

- a. Public Pools:** Separate Building, Electrical, Plumbing and Mechanical permits shall be obtained for all public pools which serve more than two-family dwellings. A Combined Building-Mechanical permit shall be obtained for public pools which serve a two-family dwelling (LAMC Section 91.107.2.2).
- b. Private Pool:** Combined Building-Mechanical permit shall be obtained to construct private pools (LAMC Section 91.107.2.2).

Exceptions: Neither building nor combined building-mechanical permits are required for the following pools:

Swimming, bathing, and wading pools not exceeding 24 inches in depth or having a surface area not exceeding 250 square feet. (LAMC Section 91.106.2, Item 8.)

- c. **Grading and Mechanical Permits:** A mechanical permit shall be obtained for any additional gas or electrical outlets installed for any of the exceptions outlined in item b. A grading permit shall be required for excavations when the pool requires a building permit or combined Building-Mechanical permit and the lot is located in the grading hillside area.

2. Plan Requirements

- a. **Number of Plans:** Two sets of plans and one set of calculations are required for all pools at the time of permit issuance. Each set of plans shall include a fully dimensioned plot plan, which shows the location of the pool, pool enclosure, and all accessory equipment and their setbacks to all adjacent buildings, property lines, and slopes.

Exception: Only one set of plans and no calculations are required when a valid City of Los Angeles Standard Plan is utilized for the swimming pool and is on file with the Department.

- b. **Signatures on Plans:** Plans and calculations shall be signed and stamped by a California registered engineer or licensed architect.
- c. **Expansive or Uncertified Fill Soils:** Plans shall indicate "Expansive Soil" or "Uncertified Fill Soil" and shall comply with Subsection 5 of Section III, Structural Design criteria, when applicable.
- d. **Notes on Plans:** Plans shall include the following notes:
 - i. No ground water shall be above any portion of the pool construction.
 - ii. All surface water shall drain away from the pool.
 - iii. Electrical inspection shall approve grounding of reinforcing, plumbing and conduit prior to the approval of reinforcing steel for pouring of concrete or gunite.
 - iv. The noise level from the pool equipment located less than 10 feet from a property line of an adjoining property, shall not exceed ambient noise level by more than five decibels.
 - v. Continuous inspection is required for shotcrete/gunite pools.

3. Location of Swimming Pools

Swimming pools shall be located as follows:

- a. **Building Code Requirements:** The setback requirements for swimming pools from the bottom of ascending slopes and the top of descending slopes shall be $H/4$ and $H/6$, respectively, where H is the height of the slope, as defined in CBC Section 1808.7.1. Refer also to Information Bulletin P/BC 2026-001.
- b. **Glazing in Hazardous Locations:** Glazing in walls of a building and fences used as the barrier for swimming pools and spas shall comply with the requirements of CBC Section 2406 when all of the following conditions are present:

- i. The bottom edge of the glazing is less than 60 inches above the pool side of the glazing.
- ii. The glazing is less than 5 feet from swimming pool or spa water's edge.

4. Special Requirements for Public Pools

- a. **Public Pool deck:** All public pools shall provide a continuous, unobstructed, minimum four-foot-wide slip-resistant non-abrasive (walking or lounging) deck area of concrete or like material flush with the top of the pool shell wall and extending completely around the pool. The deck shall be measured from the pool side edge of the coping lip. The deck shall extend four feet on both sides and rear of any diving board or slide and their appurtenances. Note: There are exceptions and additional requirements in CBC Section 3114B.
- b. **Los Angeles County Health:** All plans to construct public pools, except for those public pools serving two or three-family dwellings, shall be approved by the Los Angeles County Health Services Department prior to issuance of the building permit.

5. Structural Design

- a. **General Structural Design Requirements:** The pool shall be designed in accordance with the latest code requirements and the following:
 - i. Pneumatically applied mortar (shotcrete) pools shall be designed, tested, and inspected in conformance with CBC Section 1908.
 - ii. When casting against the earth, the reinforcing steel in gunite or shotcrete pools shall have a minimum cover of three inches. (ACI 318-19 Table 20.5.1.3.1)
 - iii. Pool walls shall be designed for earth pressures as specified in CBC Section 1610.1, approved soils report, or designed for expansive soil as specified herein.
 - iv. Hydrostatic pressure shall be used in an outward direction as a design criterion where concrete is not deposited against natural undisturbed earth or approved compacted fill.

Exception: Prefabricated swimming pools accessory to a Group R, Division 3 Occupancy in which the pool walls are entirely above the adjacent grade and if the capacity does not exceed 5,000 gallons, structural design is not required, but is still subject to other requirements, including permit and enclosure.

- b. **Prescriptive Design:** Private pools which are membrane or shell-like structures located completely in-ground, not retaining or supporting additional features above grade (e.g. waterfalls, planters and walls, etc.), and on lots not designated as hillside areas, may be designed by a California State licensed engineer or architect as follows:
 - i. The pool shall be located at least a distance equal to its maximum adjacent depth away from property lines or buildings.
 - ii. The maximum depth of pool shall be limited to 8 feet from top of bond beam or wall to bottom of pool slab.

- iii. Minimum required reinforcing steel in either direction shall be 1/10 of one percent of the wall cross-sectional area with a maximum spacing of 18 inches.
- iv. For shotcrete construction, preconstruction test panels may be waived and contact lap splices may be permitted.

c. Engineered Design: All other pools which do not conform to the prescriptive design method shall be designed in accordance with the latest code(s), including but not limited to the following:

- i. For pool walls, comply with the Chapter 22 of ACI 318-19 for flexure.
- ii. Minimum horizontal wall reinforcement shall be 0.0020 for deformed bars not larger than No. 5 with f_y not less than 60,000 psi, or 0.0025 for other deformed bars in accordance with ACI 318-19 Table 11.6.1.
- iii. Minimum reinforcement for pool floors shall be 0.0020 for grade 40 or 50 deformed bars, or 0.0018 for grade 60 deformed bars in accordance with ACI 318-19 Section 7.6.1.1. The maximum spacing of deformed reinforcement shall be the lesser of 3 times the thickness and 18" in accordance with ACI 318-19 section 7.7.2.3.
- iv. Except for basement walls and cantilever retaining walls, where the thickness of the wall is greater than 10", provide two layers of reinforcing per ACI 318-19 Section 11.7.2.3.
- v. Pools greater than 6' in depth shall include dynamic seismic lateral earth pressure as specified in the soils report per CBC Section 1803.5.12.

d. Pools in Expansive Soil: The following minimum construction requirements will be required for all swimming pools located in expansive soil:

- i. All pools shall be provided with a concrete or equally impervious deck sloping away from the pool with a minimum width of four feet and having a lip extending six inches below the bottom of the deck at its outer edge. All joints in the deck and coping shall have approved permanent resilient waterproof seals. The coping shall be set in a solid bed of mortar.

Exception: The impervious deck may be omitted, provided the pool is designed for lateral earth pressure of $P = \text{Saturated Soil Pressure} + P(s)$; and the bond beam has a thickness of not less than 12 inches and is reinforced with a minimum of three No. 4 bars in each face. The soil around the pool shall slope away from the pool to prevent ponding; or a drainage system shall be provided to collect surface water.

- ii. To determine the lateral earth pressure on the pool walls, the following formula shall be used:

$$P = 60H + P(s), \text{ where:}$$

P = lateral pressure in pounds per square foot.

H = vertical distance in feet below the ground surface.

$P(s)$ = lateral pressure due to any superimposed surcharge.

- iii. The design of bond beams and the thickness and amount of reinforcing steel at the bottom of pools shall be given special consideration. Bond beams shall have a minimum of four No. 3 bars.

- e. Pools in Uncertified Fill Soils:** The Department may issue permits for “floating type” swimming pools when the following conditions are complied with:
- i. A favorable recommendation from a soils engineer based upon findings in the field relative to the materials making up the fill, the density, containment, drainage factors, and additional conditions which may affect the pool structure or its foundation is submitted and approved by the Department.
 - ii. Pool walls shall be designed assuming no support from the surrounding soil as well as in accordance with Section III.5.b.i of this bulletin.
 - iii. The owner shall be made aware that without a favorable soil test of the fill material the only positive method to guard against settlement and possible cracking is to extend the foundation into natural ground. Therefore, the owner shall record a covenant and agreement with the County Recorder acknowledging that he/she understands that settlement and cracking may occur. The covenant and agreement shall be approved by the Grading Section prior to being recorded.
 - iv. All water connections including both inlet and outlet shall be flexible in nature so that some differential settlement between pool and utilities may take place without causing leaks.
 - v. The design engineer shall attest to the capability of the soil to support the pool.

IV. Pool Enclosure

1. General

Every swimming pool, fish pond or other body of water, which contains water 18 inches or more in depth, shall be enclosed.

Note: The Los Angeles Amendment to the California Green Building Standards Code in [LAMC Section 99.04.304.5](#) requires any permanently installed outdoor in-ground swimming pool or spa for one and two-family dwellings to be equipped with a cover having a manual or power-operated reel system.

2. Permit Requirements

A separate permit to construct the pool enclosure is required if any portion of the enclosure is constructed of masonry or concrete higher than 3.5 feet per Section 91.106.2 of the LAMC.

Where a new pool or spa is proposed, or an existing pool or spa is altered and where a new pool enclosure or alteration to an existing pool enclosure is also proposed, the pool fence/enclosure work may be combined with the pool or spa permit. Where a new pool enclosure is proposed or an existing pool enclosure is altered with no work being done to a pool or spa, a separate permit for the pool enclosure shall be required (LAMC 91.106.2 Item 13).

3. Plans

When a separate permit is required for the construction of the pool enclosure, then the plan shall require a plot plan to show the location of the pool enclosure and all buildings, pools and setback requirements. The

plans shall include construction details that complies with the requirements of this information bulletin.

4. Private Pools

All private pools shall be provided with a pool enclosure. To comply with the intent and the spirit of CBC Sections 3109, 3119B, and LAMC Section 91.3109, all new pool enclosures shall be a minimum of 5 feet in height and shall comply with the construction requirements of this section.

Additionally, for private swimming pools located at single-family homes, the Swimming Pool Safety Act ([See CBC 3109.2](#)) requires new or remodeled pools or spas to be provided with at least two of the seven drowning prevention devices listed in California Health and Safety Code (HSC) Section 115922.

Table 1: Drowning Prevention 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 the ASTM International F2286 standard in conjunction with a gate that is self-closing and self-latching and can accommodate a key lockable device.
3	A manually or power-operated safety pool cover with a label verifying it meets the ASTM International F1346-23 standard.
4 ^{(a)(b)}	Exit alarms on the private single-family home's doors and windows that provide direct access to the swimming pool or spa without any intervening enclosure. Whenever any door or window is opened or left ajar, exit alarms shall emit either an audible continuous alarm or a repeating verbal warning, such as a notification that "the door to the pool is open." An exit alarm may be battery-operated or connected to the building's electrical wiring.
5 ^{(a)(b)}	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 ^(c)	An alarm in good repair and working as designed that, when placed in a swimming pool or spa, sounds upon detecting accidental or unauthorized entrance into the water. The alarm must meet and be independently certified to the ASTM International F2208 standard, which includes surface motion, pressure, sonar, laser, and infrared alarms. A swimming protection alarm for individual use, such as one attached to a child that sounds when the child exceeds a certain distance or becomes submerged, does not qualify as a drowning prevention safety feature.
7 ^(c)	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 ASTM International, the American Society of Mechanical Engineers, or another nationally recognized standards development organization, and the feature is accompanied by a label verifying that the protection meets those standards.

Footnotes:

The requirements of HSC 115922 subdivision (a) (CBC Section 3109.2) are NOT satisfied when the following combinations occur:

- a. An exit alarm and a self-closing, self-latching device on the same door.
- b. An exit alarm and a door latch on separate doors.
- c. A safety pool cover and an alarm described in item 6 above.

Section 115922 subdivision (b) specifies that certain combinations do not meet the requirements for two of the seven drowning prevention safety features. These include:

- a.** An exit alarm and a self-closing, self-latching device on the same door. This combination is prohibited because having both features on the same door means they do not offer two independent layers of protection. If the door fails to close properly, both safety features become ineffective simultaneously.
- b.** An exit alarm and door latch on separate doors. This combination is also prohibited. It is similar to the first item since it uses a door latch on one door and an exit alarm on another, thereby defeating the purpose of having two distinct protective layers at all access points.
- c.** A safety pool cover and an alarm described in paragraph (6) of subdivision (a) of section 115922. A safety pool cover and a pool entry alarm cannot both be used to satisfy the requirement for two safety features. This is because they provide overlapping protection for either the water's surface or entry, rather than offering two distinct layers of safety.

The construction plans for the pool must clearly indicate which two methods will be used. Additionally, the combination of drowning prevention methods shown on the plans must not include any of the prohibited combinations listed in items 1 through 3 above. Table 1 shall be included on the construction plans, and designers shall clearly indicate which drowning prevention features are to be installed. The two drowning prevention devices selected shall not constitute a prohibited combination as described in Table 1's footnotes.

Buildings (dwelling or accessory buildings) on the subject lot may be used as part of, or located within the pool enclosure, provided that at least two of the drowning prevention safety features specified under CBC Section 3109.2 are provided for each building as described above.

5. Public Pools

All public pools shall provide a pool enclosure a minimum of 5 feet in height, which complies with the requirements of CBC Section 3119B and with the fence construction requirements of this bulletin.

6. Construction Requirements

The fence shall meet all of the following requirements:

- a.** The minimum fence height is measured on the side of the fence which faces away from the swimming pool as depicted in Figures 31B-4 and 31B-5 of the CBC for both public and private pools.
- b.** The maximum vertical clearance from the ground to the bottom of the fence shall be limited to two inches, measured on the side of the fence which faces away from the swimming pool.
- c.** The outside surface of a fence shall be free of protrusions, cavities, or other physical characteristics that would serve as handholds or footholds, which renders the fence easily climbable for children 5 years of age and younger.
- d.** Gaps or voids in the fence shall not allow the passage of a sphere equal to or greater than 4 inches in diameter.
- e.** Where the fence is composed of horizontal and vertical members and the distance between the top of the horizontal members is less than 45 inches, the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1¾ inches. Where there are decorative cutouts within vertical members, spacing within cutouts shall not exceed 1¾ inches in width.
- f.** Where the fence is composed of horizontal and vertical members and the distance between the top of the horizontal members is 45 inches or more, spacing between vertical members shall not exceed 4 inches. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1¾ inches in width.
- g.** Where the fence is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall be no more than 1¾ inches.

7. Gates

- a.** Construction of Gates: The method of construction for gates shall comply with Subsection 6 above.

- b. Private Pools: All access gates through the enclosure shall open away from the swimming pool and shall be self-closing with a self-latching device placed no lower than 60 inches above the ground.
- c. Driveway Gates: "Driveway Gates" are those gates across driveways. The Department may approve the use of "Driveway Gates" on a case-by-case modification, provided the following conditions are met:
 - i. The driveway gate shall be equipped with an electric gate operating device that is approved by a recognized electrical testing agency.
 - ii. The electric gate operating devices shall be provided with a safety mechanism to interrupt and recycle the device, should the gate become blocked.
 - iii. The electric gate operating devices shall be provided with a time delay closing device, which is set and maintained to activate a maximum of 20 seconds after the gate has been opened.
 - iv. No manual control or override mechanism shall be installed on or in connection with the gate operating device.
 - v. The driveway gate shall open outward away from the pool or shall be a sliding gate.
- d. Public Pools: All gates shall be equipped with self-closing and self-latching devices. The self-latching device shall be designed to keep the gate securely closed. Gates shall open outward away from the pool. Hand activated gate opening hardware shall be located at least 42 inches above the deck or walkway. All public pools shall provide a five-foot high pool enclosure, which complies with the requirements of CBC Section 3119B and with the fence construction requirements of Subsection 6 of Section IV of this bulletin.

8. Exit Alarm for Private Pool

The term "Exit Alarm" shall mean an approved device that makes audible, continuous alarm sounds when any door or window that permits access from the residence to the pool area, and is without any intervening enclosure, is opened or is left ajar. Exit alarms may be battery operated or may be connected to the electrical wiring of the building.

All exit alarms shall be permanently attached to the door or window at a minimum height of 54 inches above the floor. Exit alarms shall not be permitted when they are attached to the door or window in a manner where it may be easily removed without the use of tools. The use of "Velcro Alarms" shall not be allowed. "Velcro Alarms" are those exit alarms attached to the door or window by use of Velcro or self-adhesive.

Exceptions:

1. Exit alarms need not be required at a window that has a bottom sill minimum 60 inches above the floor.
2. Exit alarms need not be required when the following conditions are met (unless the alarm is being used as (1) of the (2) required safety features per CBC Section 3109.2, and in compliance with Section 115922 subdivision (b)):

- i. Doors providing direct access from a building to the swimming pool are equipped with self-closing, self-latching devices with a release mechanism placed no lower than 54 inches above the floor, or
- ii. The pool is equipped with an approved safety pool cover which is manually or power-operated and meets all of the performance standards of ASTM F 1346-23.

V. Pool Equipment

1. Pool Equipment

Plans shall show location of all pool equipment. Every pool shall be equipped with an approved filter unit and drain. The location of pool equipment shall require an additional inspection and approval by the Noise Enforcement Inspector, when the pool equipment is located less than 10 feet from a property line of an adjoining property. The fee for the additional inspection shall be charged and collected when the swimming pool permit is issued.

2. Pool Drainage

- a. General Requirements: Pool drainage (outlet) shall comply with the requirements of Chapter 3 of the Uniform Swimming Pool Spa and Hot Tub Code and the following requirements.

Outlets less than 12 inches across shall be covered with anti-entrapment grates that cannot be removed except with a use of tools. Slots or openings in the grates or similar protective devices shall not exceed ½ inch in the smallest dimension and shall be of a shape, area and arrangement that would prevent physical entrapment and would not pose any suction hazard to bathers. Anti-entrapment covers are required for new pools and spas, structural remodeling of an existing pool or spa, and for an existing pool or spa whenever a building permit is issued for the remodeling of a single-family dwelling.

- b. Private pools: Each new pool or spa shall have a minimum of two circulation drains per pump. The drains or outlets shall be hydraulically balanced and symmetrically plumbed through one or more "T" fittings, and separated by a distance at least three feet in any dimension between drains. Any backup safety system shall meet the standards as published in the "Guidelines for Entrapment Hazards: Making Pools and Spas Safer," Publication Number 363, March 2005, United States Consumer Products Safety Commission.

This document may be downloaded from the following website:

<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/wmb-entrapment-hazards.pdf>

- c. Public pools: Waste water from periodic draining of the pool or spa for maintenance purpose shall be discharged into the sanitary sewer.

3. Deck Drainage

Decks built around the pools shall not drain into the sanitary sewer. Drainage may be conducted to street (storm drain) via non-erosive device.

VI. Existing Pools

1. Maintenance of Pool Enclosure

Existing pool (fence) enclosures, which are 4½ feet in height and which comply with all other current fence construction requirements of Subsections 6 and 7 of Section IV above, shall be allowed to continue to exist under the nonconforming rights per LAMC Section 91.8103.

2. Repair or Replacement of Existing Pool Enclosure

If repair is required for the existing legal 4½ feet high fence, then the fence shall comply with all fence construction requirements and may maintain the 4½ feet fence height. If the fence does not comply with all the fence construction requirements of Subsections 6 and 7 of Section IV above, then the fence shall be made to comply with Subsection 5 of Section IV for Public Pools or Subsection 4 of Section IV for Private Pools. See Subsection 2 of Section IV above to determine when a separate permit for a pool enclosure is required.

3. Adding Pool or Spa to a Lot with an Existing Spa or Pool

Notwithstanding any other provisions of the municipal code to the contrary, if a legal 4½ feet high fence around the existing private pool or spa is existing, and a new private pool or spa is constructed on the same lot, then a five-foot high pool enclosure, constructed per Subsections 6 and 7 of Section IV above, shall be constructed immediately around the new pool or spa, or the pool enclosure shall comply with the following:

- a.** All private pools and spas on the lot shall be isolated from the home by a five-foot high fence that meets all the requirements of CBC Section 3119B and Subsections 4, 6, and 7 of Section IV, or
- b.** Maintenance of the legal 4½ feet high fence (CBC Section 3109 and LAMC 91.3109) around both private pool and spa is permitted provided the construction of the existing fence complies with above Subsections 4, 6 and 7 of Section IV requirements and one of the following for the new pool or spa is provided:
 - i.** Approved safety pool cover that complies with ASTM Standard F 1346-23 (CBC Section 3109.2) for a pool and/or locking safety cover that complies with ASTM F1346 for a spa, or
 - ii.** Approved exit alarm per Subsection 8 of Section IV on all doors from the home to the pool or spa, or if other buildings are part of the pool enclosure, then the doors providing direct access from the building (garage) to the private pool shall be equipped with a self-closing, self-latching device with a release mechanism placed no lower than 54 inches above the floor.

4. Anti-Entrapment Cover Requirement for Existing Swimming Pools and Spas

An anti-entrapment cover is required for a single-family dwelling when:

- a.** A permit is required for structural remodeling of an existing swimming pool, toddler pool or spa.

Contents

DESIGN AND CONSTRUCTION OF SWIMMING POOLS	1
I. Purpose.....	1
II. Definitions	1
III. Pool – General Requirements.....	1
1. Permit Requirements	1
2. Plan Requirements	2
3. Location of Swimming Pools	2
4. Special Requirements for Public Pools	3
5. Structural Design	3
IV. Pool Enclosure	5
1. General.....	5
2. Permit Requirements	5
3. Plans.....	5
4. Private Pools	6
5. Public Pools.....	7
6. Construction Requirements	7
7. Gates	7
8. Exit Alarm for Private Pool	8
V. Pool Equipment	9
1. Pool Equipment	9
2. Pool Drainage.....	9
3. Deck Drainage.....	9
VI. Existing Pools	9
1. Maintenance of Pool Enclosure.....	9
2. Repair or Replacement of Existing Pool Enclosure	10
3. Adding Pool or Spa to a Lot with an Existing Spa or Pool	10
4. Anti-Entrapment Cover Requirement for Existing Swimming Pools and Spas	10