REVISION RECORD
FOR THE STATE OF CALIFORNIA

SUPPLEMENT

July 1, 2015

2013 Title 24, Part 2, Vol. 2, California Building Code

PLEASE NOTE: The date of this supplement is for identification purposes only.
See the History Note Appendix.

It is suggested that the section number as well as the page number be checked when inserting this material and removing the superseded material. In case of doubt, rely on the section numbers rather than the page numbers because the section numbers must run consecutively.

It is further suggested that the superseded material be retained with this revision record sheet so that the prior wording of any section can be easily ascertained.

Please keep the removed pages with this revision page for future reference.

Note

Due to the fact that the application date for a building permit establishes the California Building Standards Code provisions that are effective at the local level, which apply to the plans, specifications, and construction for that permit, it is strongly recommended that the removed pages be retained for historical reference.

Part 2, Vol. 2

Remove Existing Pages	Insert Blue Pages
v and vi	v and vi
xvii and xviii	xvii and xviii
99 and 100	99 and 100
133 and 134	133 and 134
429 through 432	429 through 432
437 through 452	437 through 452
457 through 462	457 through 462
601 and 602	601 and 602
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755 and 756	755 and 756

Item No. 5520S1322

Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2009 edition. Deletion indicators in the form of an arrow (➡) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or a table has been deleted.

Symbols in the margin indicate the status of code changes as follows:

|| This symbol indicates that a change has been made to a California amendment.

> This symbol indicates deletion of California amendment language.

| This symbol indicates that a change has been made to International Code Council model language.

➡ This symbol indicates deletion of International Code Council model language.

A single asterisk [*] placed in the margin indicates that text or a table has been relocated within the code. A double asterisk [**] placed in the margin indicates that the text or table immediately following it has been relocated there from elsewhere in the code. The following table indicates such relocations in the 2012 edition of the *International Building Code*.

2012 LOCATION	2009 LOCATION
407.4	1014.2
410.6	1015.6
424	402.6.3
712.1	708.1
712.1.2	708.2, Exception 1
712.1.3	708.2, Exception 2
712.1.3.1	708.2, Exception 2.1
712.1.3.2	708.2, Exception 2.2
712.1.4	708.2, Exception 3
712.1.5	708.2, Exception 4
712.1.6	708.2, Exception 5
712.1.7	708.2, Exception 6
712.1.8	708.2, Exception 7
712.1.9	708.2, Exception 8
712.1.10	708.2, Exception 9
712.1.11	708.2, Exception 10
712.1.12	708.2, Exception 11
712.1.13	708.2, Exception 12
712.1.14	708.2, Exception 13
712.1.15	708.2, Exception 14
712.1.16	708.2, Exception 15
712.1.18	708.2, Exception 16
713.3 through 713.14.1.1	708.3 through 708.14.1.1
909.21 through 909.21.11	708.14.2 through 708.14.2.11
1004.1.1.2	1004.6
1008.1.9.8	1008.1.4.4
1013.8	1405.13.2
1028.10.1	1017.4

continued	
2012 LOCATION	**2009 LOCATION**
1028.10.1.1	1017.4.1
1028.10.1.1	1017.4.2
1028.10.1.2	1017.4.3
1210.3.1	2903.1
1210.3.2	2903.2
1406.2.1	1406.2.1.1
1406.2.2	1406.2.1
1607.6	1605.4
1704.3	1705.1
1704.4	1709.1
1704.5	1710.1
1705.1.1	1704.15
1705.4.2	1704.11
1705.10	1706.1
1705.11	1707.1
1705.12	1708.1
3313.1	3311.4

Code Development Committee Responsibilities (Letter Designations in Front of Section Numbers)

In each code development cycle, proposed changes to the code are considered at the Code Development Hearings by the applicable International Building Code Development Committee (IBC-Fire Safety, General, Means of Egress or Structural). Proposed changes to a code section that has a number beginning with a letter in brackets are considered by a different code development committee. For example, proposed changes to code sections that have [F] in front of them (e.g., [F] 903.1.1.1) are considered by the International Fire Code Development Committee during the portion of the code development hearings when the International Fire Code Development Committee meets.

The content of sections in this code that begin with a letter designation is maintained by another code development committee in accordance with the following:

[A] = Administrative Code Development Committee;

[E] = International Energy Conservation Code Development Committee (Commercial Energy Committee or Residential Energy Committee, as applicable);

[EB] = International Existing Building Code Development Committee;

[F] = International Fire Code Development Committee;

[FG] = International Fuel Gas Code Development Committee;

[M] = International Mechanical Code Development Committee; and

[P] = International Plumbing Code Development Committee.

How to Distinguish Between Model Code Language and California Amendments

To distinguish between model code language and the incorporated California amendments, including exclusive California standards, California amendments will appear in italic font print.

***[BSC]** This is an example of a state agency acronym used to identify an adoption or amendment by the agency. The acronyms will appear at California Amendments and in the Matrix Adoption Tables. Sections 1.2 through 1.14 in Chapter 1, Division 1 of this code, explain the used acronyms, the application of state agency adoptions to building occupancies or building features, the enforcement agency as designated by state law (may be the state adopting agency or local building or fire official), the authority in state law for the state agency to make the adoption, and the specific state law being implemented by the agency's adoption. The following acronyms are used in Title 24 to identify the state adopting agency making an adoption.*

Legend of Acronyms of Adopting State Agencies

BSC	*California Building Standards Commission (see Section 1.2)*
BSCC	*Board of State and Community Corrections (see Section 1.3)*
SFM	*Office of the State Fire Marshal (see Section 1.11)*
HCD 1	*Department of Housing and Community Development (see Section 1.8.2.1.1)*
HCD 2	*Department of Housing and Community Development (see Section 1.8.2.1.3)*
HCD 1/AC	*Department of Housing and Community Development (see Section 1.8.2.1.2)*
DSA-AC	*Division of the State Architect-Access Compliance (see Section 1.9.1)*
DSA-SS	*Division of the State Architect-Structural Safety (see Section 1.9.2)*
DSA-SS/CC	*Division of the State Architect-Structural Safety/Community Colleges (see Section 1.9.2.2)*
OSHPD 1	*Office of Statewide Health Planning and Development (see Section 1.10.1)*
OSHPD 2	*Office of Statewide Health Planning and Development (see Section 1.10.2)*
OSHPD 3	*Office of Statewide Health Planning and Development (see Section 1.10.3)*
OSHPD 4	*Office of Statewide Health Planning and Development (see Section 1.10.4)*
DPH	*Department of Public Health (see Section 1.7)*
AGR	*Department of Food and Agriculture (see Section 1.6)*
CEC	*California Energy Commission (see Section 100 in Part 2, the California Energy Code)*
CA	*Department of Consumer Affairs (see Section 1.6):* *Board of Barbering and Cosmetology* *Board of Examiners in Veterinary Medicine* *Board of Pharmacy* *Acupuncture Board* *Bureau of Home Furnishings* *Structural Pest Control Board*
SL	*State Library (see Section 1.12)*
SLC	*State Lands Commission (see Section 1.14)*
DWR	*Department of Water Resources (see Section 1.12 of Chapter 1 of the California Plumbing Code in Part 2 of Title 24)*

The state agencies are available to answer questions about their adoptions. Contact information is provided on page iv of this code.

To learn more about the use of this code refer to pages xvii and xviii. Training materials on the application and use of this code are available at the website of the California Building Standards Commission www.bsc.ca.gov.

this section when designed as components per ASCE 7 Chapter 13.

3. *Systems listed in this section can be used for seismically isolated buildings when permitted by Section 1613A.4.1.*

1616A.1.5 ASCE 7, Section 12.2.3.1. *Replace ASCE 7, Section 12.2.3.1, Items 1 and 2, by the following:*

The value of the response modification coefficient, R, used for design at any story shall not exceed the lowest value of R that is used in the same direction at any story above that story. Likewise, the deflection amplification factor, C_d, and the system over strength factor, Ω_0, used for the design at any story shall not be less than the largest value of these factors that are used in the same direction at any story above that story.

1616A.1.6 ASCE 7, Section 12.2.3.2. *Modify ASCE 7, Section 12.2.3.2, by adding the following additional requirements:*

f. *Where design of elements of the upper portion is governed by special seismic load combinations, the special loads shall be considered in the design of the lower portion.*

1616A.1.7 ASCE 7, Section 12.2.5.6.1 [DSA-SS] *The exception after the first paragraph is not permitted by DSA-SS.*

1616A.1.8 ASCE 7, Section 12.2.5.7.1 [DSA-SS] *The exception after the first paragraph is not permitted by DSA-SS.*

1616A.1.9 ASCE 7, Section 12.2.5.7.2 [DSA-SS] *The exception after the first paragraph is not permitted by DSA-SS.*

1616A.1.10 ASCE 7, Section 12.3.3. *Modify first sentence of ASCE 7, Section 12.3.3.1, as follows:*

12.3.3.1 Prohibited horizontal and vertical irregularities for Seismic Design Categories D through F. *Structures assigned to Seismic Design Category D, E or F having horizontal structural irregularity Type 1b of Table 12.3-1 or vertical structural irregularities Type 1b, 5a or 5b of Table 12.3-2 shall not be permitted.*

1616A.1.11 ASCE 7, Section 12.7.2. *Modify ASCE 7, Section 12.7.2, by adding Item 6 to read as follows:*

6. *Where buildings provide lateral support for walls retaining earth, and the exterior grades on opposite sides of the building differ by more than 6 feet (1829 mm), the load combination of the seismic increment of earth pressure due to earthquake acting on the higher side, as determined by a geotechnical engineer qualified in soils engineering plus the difference in earth pressures shall be added to the lateral forces provided in this section.*

1616A.1.12 ASCE 7, Section 12.8.1.3. *Replace ASCE 7, Section 12.8.1.3, by the following:*

12.8.1.3 Maximum S_s value in determination of C_s. *For regular structures five stories or less above the base, as defined in Section 11.2, and with a period, T, of 0.5 s or less, C_s is permitted to be calculated using the larger of either S_s =1.5 or 80 percent of the value of S_s determined per Sections 11.4.1 or 11.4.7.*

1616A.1.13 ASCE 7, Section 12.9.4. *Replace ASCE 7 Section 12.9.4 as follows:*

12.9.4 Scaling design values of combined response. *Modal base shears used to determine forces and drifts shall not be less than the base shear calculated using the equivalent lateral force procedure of Section 12.8.*

1616A.1.14 ASCE 7, Section 12.10.2.1. *Replace ASCE 7, Exception 1 of Section 12.10.2.1, by adding the following:*

Exception:

1. *The forces calculated above need not exceed those calculated using the load combinations of Section 12.4.3.2 with seismic forces determined by Equation 12.10-3 and transfer forces, where applicable.*

1616A.1.15 ASCE 7, Section 12.12.3. [OSHPD 1 & 4] *Replace ASCE 7 Equation 12.12-1 by the following:*

$$\delta_M = C_d \delta_{max} \qquad \textbf{(Equation 12.12-1)}$$

1616A.1.16 ASCE 7, Section 12.13.1. *Modify ASCE 7 Section 12.13.1 by adding Section 12.13.1.1 as follows:*

12.13.1.1 Foundations and superstructure-to-foundation connections. *The foundation shall be capable of transmitting the design base shear and the overturning forces from the structure into the supporting soil. Stability against overturning and sliding shall be in accordance with Section 1605A.1.1.*

In addition, the foundation and the connection of the superstructure elements to the foundation shall have the strength to resist, in addition to gravity loads, the lesser of the following seismic loads:

1. *The strength of the superstructure elements.*
2. *The maximum forces that would occur in the fully yielded structural system.*
3. *Forces from the load combinations with overstrength factor in accordance with ASCE 7, Section 12.4.3.2.*

Exceptions:

1. *Where referenced standards specify the use of higher design loads.*
2. *When it can be demonstrated that inelastic deformation of the foundation and superstructure-to-foundation connection will not result in a weak story or cause collapse of the structure.*
3. *Where basic structural system consists of light framed walls with shear panels, unless the reference standard specifies the use of higher design loads.*

Where the computation of the seismic overturning moment is by the equivalent lateral-force method or the modal analysis method, reduction in overturning moment permitted by section 12.13.4 of ASCE 7 may be used.

Where moment resistance is assumed at the base of the superstructure elements, the rotation and flexural deformation of the foundation as well as deformation of the superstructure-to-foundation connection shall be considered in the drift and deformation compatibility analyses.

1616A.1.17 ASCE 7, Section 13.1.3. [OSHPD 1 & 4] *Modify ASCE 7 Section 13.1.3 by the following:*

The design of supports and attachments for all nonstructural components shall have a component importance factor, I_p, equal to 1.5.

Exception: *Freestanding skilled nursing or acute psychiatric buildings, not providing services/systems, utilities, or access/egress to general acute care buildings designated as SPC 3 or higher in accordance with Chapter 6 of the California Administrative Code, shall be permitted to use component importance factor, I_p, as shown in Table 1616A.1.17.*

TABLE 1616A.1.17
COMPONENT IMPORTANCE FACTOR (I_P)[1] FOR FREESTANDING SKILLED NURSING AND ACUTE PSYCHIATRIC BUILDINGS

DESCRIPTION	IMPORTANCE FACTOR (I_p)[1]
Architectural components	1.0
Mechanical and electrical components	1.5
Medical devices	1.5
Piping, including in-line components	1.5
HVAC ducts, including in-line components	1.0
Electrical raceways	1.0

1. Components required for life-safety purposes after an earthquake, including emergency and standby power systems, fire protection sprinkler systems, fire alarm control panels, and egress stairways shall have a component importance factor (I_p) of 1.5.

1616A.1.18 ASCE 7, Section 13.1.4. *Replace ASCE 7, Section 13.1.4, with the following:*

13.1.4 Exemptions. *The following nonstructural components are exempt from the requirements of this section:*

1. *Furniture (except storage cabinets as noted in Table 13.5-1).*
2. *Temporary or moveable (mobile) equipment.*

   Exceptions:

   a) *Equipment shall be anchored if it is permanently attached to the building utility services such as electricity, gas or water. For the purposes of this requirement, "permanently attached" shall include all electrical connections except plugs for duplex receptacles.*

   b) *The enforcement agency shall be permitted to require temporary attachments for movable equipment which is usually stationed in one place and heavier than 400 pounds, when they are not in use for a period longer than 8 hours at a time.*

3. *Architectural, mechanical and electrical components in Seismic Design Categories D, E or F where all of the following apply:*

   a. *The component is positively attached to the structure;*

   b. *Flexible connections are provided at seismic separation joints and between the component and associated ductwork, piping and conduit; and either:*

      i. *The component weighs 400 pounds (1780 N) or less and has a center of mass located 4 feet (1.22 m) or less above the adjacent floor or roof level that directly support the component;*

         Exception: *Special Seismic Certification requirements of this code in accordance with Section 1705A.12.4 shall be applicable.*

      or

      ii. *The component weighs 20 pounds (89 N) or less or, in the case of a distributed system, 5 lb/ft (73 N/m) or less.*

Exception: *The enforcement agency shall be permitted to require attachments for equipment with hazardous contents to be shown on construction documents irrespective of weight.*

1616A.1.19 ASCE 7, Section 13.4 *Replace ASCE 7, Sections 13.4.2.3, with the following:*

13.4.2.3 Post-installed anchors in concrete and masonry.

Post-installed anchors in concrete used for component anchorage shall be pre-qualified for seismic applications in accordance with ACI 355.2, ICC-ES AC193 or ICC-ES AC308. Post-installed anchors in masonry used for component anchorage shall be pre-qualified for seismic applications in accordance with ICC-ES AC01, AC58 or AC106.

Use of screw anchors shall be limited to dry interior conditions. Re-use of screw anchors or screw anchor holes shall not be permitted.

1616A.1.20 ASCE 7, Section 13.5.6. *Replace ASCE 7, Section 13.5.6 with the following:*

13.5.6 Suspended ceilings. *Suspended ceilings shall be in accordance with this section.*

13.5.6.1 Seismic forces. *The weight of the ceiling, W_p, shall include the ceiling grid; ceiling tiles or panels; light fixtures if attached to, clipped to, or laterally supported by the ceiling grid; and other components that are laterally supported by the ceiling. W_p shall be taken as not less than 4 psf (19 N/m^2).*

The seismic force, F_p, shall be transmitted through the ceiling attachments to the building structural elements or the ceiling-structure boundary.

13.5.6.2 Seismic design requirements. *Suspended acoustical tile or lay-in panel ceilings shall be designed in accordance with ASTM E 580, Section 5.2.8, and the requirements of Sections 13.5.6.2.1 and 13.5.6.2.2, or be designed in accordance with Section 13.2.1.(1), or be seismically qualified in accordance with Sections 13.2.5 or 13.2.6.*

13.5.6.2.1 Industry standard construction for acoustical tile or lay-in panel ceilings. *Acoustical tile or lay-in panel ceilings in Seismic Design Categories D, E, and F shall be designed and installed in accordance with ASTM C 635, ASTM C 636, and ASTM E 580, Section 5 - Seismic Design Categories D, E, and F as modified by Section 13.5.6.2.2.*

13.5.6.2.2 Modification to ASTM E 580. *Modify ASTM E 580 by the following:*

1. ***Exitways.*** *Lay-in ceiling assemblies in exitways of hospitals and essential services build-*

1705*A*.11 Special inspections for seismic resistance. Special inspections itemized in Sections 1705*A*.11.1 through 1705*A*.11.8, unless exempted by the exceptions of Section 1704*A*.2, are required for the following:

1. The seismic force-resisting systems in structures assigned to Seismic Design Category D, E or F in accordance with Sections 1705*A*.11.1 through 1705*A*.11.3, as applicable.
2. *Equipment/components requiring special seismic certification* assigned to Seismic Design Category D, E or F in accordance with Section 1705*A*.11.4.
3. Architectural, mechanical and electrical components in accordance with Sections 1705*A*.11.5 and 1705*A*.11.6.
4. Storage racks in structures assigned to Seismic Design Category D, E or F in accordance with Section 1705*A*.11.7.
5. Seismic isolation *and damping* systems in accordance with Section 1705*A*.11.8.

1705*A*.11.1 Structural steel. Special inspection for structural steel shall be in accordance with the quality assurance requirements of AISC 341 a*s modified by Section 1705A.2.1 of this code.*

1705*A*.11.2 Structural wood. Continuous special inspection is required during field gluing operations of elements of the seismic force-resisting system. Periodic special inspection is required for nailing, bolting, anchoring and other fastening of components within the seismic force-resisting system, including wood shear walls, wood diaphragms, drag struts, braces, shear panels and hold-downs.

1705*A*.11.3 Cold-formed steel light-frame construction. Periodic special inspection is required during welding operations of elements of the seismic force-resisting system. Periodic special inspection is required for screw attachment, bolting, anchoring and other fastening of components within the seismic force-resisting system, including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.

1705*A*.11.4 *Special inspection for special seismic certification*. The special inspector shall examine *equipment and components* requiring *special* seismic *certification* in accordance with Section *1705A.12.4* and verify that the label, anchorage or mounting conforms to the certificate of compliance.

1705*A*.11.5 Architectural components. Periodic special inspection is required during the erection and fastening of exterior cladding, interior and exterior nonbearing walls, *ceilings,* and interior and exterior veneer in structures assigned to Seismic Design Category D, E or F.

1705*A*.11.5.1 Access floors. Periodic special inspection is required for the anchorage of access floors in structures assigned to Seismic Design Category D, E or F.

1705*A*.11.6 Mechanical and electrical components. Special inspection for mechanical and electrical components shall be as follows:

1. Periodic special inspection is required during the anchorage of electrical equipment for emergency or standby power systems in structures assigned to Seismic Design Category D, E or F;
2. Periodic special inspection is required during the anchorage of other electrical equipment in structures assigned to Seismic Design Category *D*, E or F;
3. Periodic special inspection is required during the installation and anchorage of piping systems designed to carry hazardous materials and their associated mechanical units in structures assigned to Seismic Design Category D, E or F;
4. Periodic special inspection is required during the installation and anchorage of ductwork designed to carry hazardous materials in structures assigned to Seismic Design Category D, E or F; and
5. Periodic special inspection is required during the installation and anchorage of vibration isolation systems in structures assigned to Seismic Design Category D, E or F where the construction documents require a nominal clearance of $^1/_4$ inch (6.4 mm) or less between the equipment support frame and restraint.

1705*A*.11.7 Storage racks. Periodic special inspection is required during the anchorage of storage racks 8 feet (2438 mm) or greater in height in structures assigned to Seismic Design Category D, E or F.

1705*A*.11.8 Seismic isolation *and damping systems.* Periodic special inspection shall be provided for seismic isolation systems during the fabrication and installation of isolator units and energy dissipation devices. *Continuous special inspection is required for prototype and production testing of isolator units and damping devices.*

1705*A*.12 Testing and *certification* for seismic resistance. The testing and *certification* specified in Sections 1705*A*.12.1 through 1705*A*.12.4, unless exempted from special inspections by the exceptions of Section 1704*A*.2 are required as follows:

1. The seismic force-resisting systems in structures assigned to Seismic Design Category D, E or F shall meet the requirements of Sections 1705*A*.12.1 and 1705*A*.12.2, as applicable.
2. *Equipment and components* in structures assigned to Seismic Design Category D, E or F *shall comply with* the *special seismic* certification requirements of Section *1705A.12.4*.
3. Architectural, mechanical and electrical components in structures assigned to Seismic Design Category D, E or F and where the requirements of ASCE 7 Section 13.2.1, *Item 2,* are met by submittal of manufacturer's certification, shall comply with Section 1705*A*.12.3.
4. The seismic isolation system in seismically isolated structures *and damping devices*, shall meet the testing requirements of Section *1705A.12.5.*

1705*A*.12.1 Concrete reinforcement. Where reinforcement complying with ASTM A 615 is used to resist earth-

quake-induced flexural and axial forces in special moment frames, special structural walls and coupling beams connecting special structural walls, in structures assigned to Seismic Design Category B, C, D, E or F, the reinforcement shall comply with Section 21.1.5.2 of ACI 318. Certified mill test reports shall be provided for each shipment of such reinforcement. Where reinforcement complying with ASTM A 615 is to be welded, chemical tests shall be performed to determine weldability in accordance with Section 3.5.2 of ACI 318.

1705*A*.12.2 Structural steel. Testing for structural steel shall be in accordance with the quality assurance requirements of AISC 341.

Exception: Testing for structural steel in structures assigned to Seismic Design Category C that are not specifically detailed for seismic resistance, with a response modification coefficient, *R*, of 3 or less, excluding cantilever column systems.

1705*A*.12.3 *Manufacturer's* certification of nonstructural components. The registered design professional shall specify on the construction documents the requirements for *manufacturer's* certification by analysis, testing or experience data for nonstructural components, in accordance with Section *13.2.1, Item 2* of ASCE 7, where such certification is required by Section 1705*A*.12.

Seismic sway braces satisfying requirements of FM 1950 shall be deemed to satisfy the requirements of this Section.

1705A.12.4 Special seismic certification. [OSHPD 1 & 4] The registered design professional shall specify on the construction documents the requirements for special seismic certification by analysis, testing or experience data for equipment and components listed in Section *1705A.12.4.1*.

Active or energized equipment and components shall be certified exclusively on the basis of approved shake table testing in accordance with ICC-ES AC 156.

Minimum of two equipment/components shall be tested for a product line with similar structural configuration. Where a range of products are tested, the two equipment/components shall be either the largest and smallest, or approved alternative representative equipment/components.

Exception: *When a single product (and not a product line with more than one product with variations) is certified and manufacturing process is ISO 9001 certified, one test shall be permitted.*

All tests shall be performed by an independent laboratory having accreditation to the International Standards Organization (ISO) accreditation standard 17025 or shall be under the responsible charge of an independent California licensed engineer. Test reports shall be reviewed and accepted by an independent California licensed structural engineer.

For a multicomponent system, where active or energized components are certified by tests, connecting elements, attachments, and supports can be justified by supporting analysis.

1705A.12.4.1 *Special seismic certification shall be required for the following systems, equipment, and components:*

1. *Emergency and standby power systems.*
2. *Elevator equipment (excluding elevator cabs).*
3. *Components with hazardous contents.*
4. *Exhaust and smoke control fans.*
5. *Switchgear and switchboards.*
6. *Motor control centers.*
7. *Radiography and fluoroscopy systems in fluoroscopy rooms.*
8. *CT (Computerized Tomography) systems.*
9. *Air conditioning units.*
10. *Air handling units.*
11. *Chillers, evaporators, and condensers.*
12. *Cooling towers.*
13. *Transformers.*
14. *Electrical substations.*
15. *UPS and batteries.*
16. *Distribution panels.*
17. *Control panels.*
18. *Power isolation and correction systems.*
19. *Motorized surgical lighting systems.*
20. *Motorized operating table systems.*

Exceptions:

1. *Equipment and components weighing not more than 20 lbs. supported directly on structures (and not mounted on other equipment or components) with supports and attachments in accordance with this code.*
2. *Movable (mobile) and temporary equipment/components that are not anchored to structure or permanently attached to the building utility services such as electricity, gas or water. For the purposes of this requirement, "permanently attached" shall include all electrical connections except plugs for duplex receptacles.*
3. *Pipes, ducts, conduits and cable trays, excluding in-line equipment and components.*
4. *Underground tanks.*
5. *Electric motors and pumps not more than 10 hp rigidly supported directly on structures (and not mounted on other equipment or components) with supports and attachments in accordance with this code.*
6. *Components where importance factor, I_p, is permitted to be 1.0 by this code.*

load. Pool contractors are encouraged to share this information with consumers regarding the potential dangers a pool or spa poses toddlers. Additionally, pool contractors may provide the consumer with swimming pool safety materials produced from organizations such as the United States Consumer Product Safety Commission, Drowning Prevention Foundation, California Coalition for Children's Safety & Health, Safe Kids Worldwide, Association of Pool and Spa Professionals, or the American Academy of Pediatrics.

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115924
AB 3305 (Statutes 1996, c.925); AB 2977 (Statutes 2006, c.478); AB 382 (Statutes 2007, c.596)

3109.4.4.5 Exempt facilities. *The requirements of this article shall not apply to any of the following:*

1. *Public swimming pools.*
2. *Hot tubs or spas with locking safety covers that comply with the American Society for Testing Materials Emergency Performance Specification (ASTM ES 13-89).*
3. *Any pool within the jurisdiction of any political subdivision that adopts an ordinance for swimming pool safety that includes requirements that are at least as stringent as this division.*
4. *An apartment complex or any residential setting other than a single-family home.*

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115925
Ab 3305, (Statutes 1996, c.925); AB 2977 (Statutes 2006, c.478); AB 382 (Statutes 2007,c.596)

3109.4.4.6 Application to facilities regulated by Department of Social Services. *This division does not apply to any facility regulated by the State Department of Social Services even if the facility is also used as a private residence of the operator. Pool safety in those facilities shall be regulated pursuant to regulations adopted therefor by the State Department of Social Services.*

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115926
Ab 3305, Statutes 1996, c.925); AB 2977 (Statutes 2006, c.478); AB 382 (Statutes 2007, c.596)

3109.4.4.7 Modification and interpretation of division. *Notwithstanding any other provision of law, this article shall not be subject to further modification or interpretation by any regulatory agency of the state, this authority being reserved exclusively to local jurisdictions, as provided for in Item 5 of Section 3109.4.4.2 and Item 3 of Section 3109.4.4.5.*

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115927
AB 3305 (Statutes 1996, c.925); AB 2977 (Statutes 2006, c.478); AB 382 (Statutes 2007, c.596)

3109.4.4.8 Construction requirements for building a pool or spa. *Whenever a building permit is issued for the construction a new swimming pool or spa, the pool or spa shall meet all of the following requirements:*

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).*
4. *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 of 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.*
5. *Any backup safety system that an owner of a new swimming pool or spa may choose to install in addition to the requirements set forth in subdivisions (1) through (4) above shall meet the standards as published in the document, "Guidelines for Entrapment Hazards: Making Pools and Spas Safer," Publication Number 363, March 2005, United States Consumer Products Safety Commission.*
6. *Whenever a building permit is for the remodel or modification of any existing swimming pool, toddler pool, or spa, the permit shall require that the suction outlet or suction outlets of the existing swimming pool, toddler pool, or spa be upgraded so as to be equipped with antientrapment grates, as specified in the ANSI/APSP-16 performance standard or a successor standard designated by the federal Consumer Product Safety Commission.*

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115928 AB 3305 (Statutes 1996, c.925); AB 2977 (Statutes 2006, c.478); AB 478 (Statutes 2007, c.596)

3109.5 Entrapment avoidance. *Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.*

3109.6 Informative documents.

1. *The Legislature encourages a private entity, in consultation with the Epidemiology and Prevention for Injury Control Branch of the department, to produce an informative brochure or booklet, for consumer use, explaining the child drowning hazards of, possible safety measures for, and appropriate drowning hazard prevention measures for, home swimming pools and spas, and to donate the document to the department.*
2. *The Legislature encourages the private entity to use existing documents from the United States Consumer Product Safety Commission on pool safety.*
3. *If a private entity produces the document described in Subdivisions 1 and 2 and donates it to the department, the department shall review and approve the brochure or booklet.*
4. *Upon approval of the document by the department, the document shall become the property of the state and a part of the public domain. The department shall place the document on its Web site in a format that is readily available for downloading and for publication. The department shall review the document in a timely and prudent fashion and shall complete the review within 18 months of receipt of the document from a private entity.*

SECTION 3110
AUTOMATIC VEHICULAR GATES

3110.1 General. Automatic vehicular gates shall comply with the requirements of Sections 3110.2 through 3110.4 and other applicable sections of this code.

3110.2 Definition. The following term is defined in Chapter 2:

VEHICULAR GATE.

3110.3 Vehicular gates intended for automation. Vehicular gates intended for automation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

3110.4 Vehicular gate openers. Vehicular gate openers, where provided, shall be listed in accordance with UL 325.

SECTION 3111
SOLAR PHOTOVOLTAIC PANELS/MODULES

3111.1 Solar photovoltaic power systems*. Solar photovoltaic power systems shall be installed in accordance with Sections 3111.2 through 3111.3 and the California Electrical Code.*

3111.2 Access and pathways. *Roof access, pathways and spacing requirements shall be provided in accordance with Sections 3111.2.1 through 3111.2.3.3.*

Exceptions:

1. *Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures.*
2. *Roof access, pathways, and spacing requirements need not be provided where the fire chief has determined rooftop operations will not be employed.*

3111.2.1 Roof access points. *Roof access points shall be located in areas that do not require the placement of ground ladders over openings such as windows or doors, and located at strong points of building construction in locations where the access point does not conflict with overhead obstructions such as tree limbs, wires or signs.*

3111.2.2 Solar photovoltaic systems for Group R-3 buildings. *Solar photovoltaic systems for Group R-3 buildings* shall be provided in accordance with Sections 3111.2.2.1 through 3111.2.2.4.

Exception: *These requirements shall not apply to structures designed and constructed in accordance with the California Residential Code.*

3111.2.2.1 Size of solar photovoltaic array. *Each photovoltaic array shall be limited to 150 feet (45 720 mm) by 150 feet (45 720 mm). Multiple arrays shall be separated by a 3-foot-wide (914 mm) clear access pathway.*

3111.2.2.2 Hip roof layouts. *Panels and modules installed on Group R-3 buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels and modules are located. The access pathway shall be located at a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.*

Exception: *These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.*

3111.2.2.3 Single ridge roofs. *Panels and modules installed on Group R-3 buildings with a single ridge shall be located in a manner that provides two, 3-foot-wide (914 mm) access pathways from the eave to the ridge on each roof slope where panels and modules are located.*

Exception: *This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.*

3111.2.2.4 Roofs with roof hips and valleys. *Panels and modules installed on Group R-3 buildings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels and modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley.*

Exception: *These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.*

3111.2.2.5 Allowance for smoke ventilation operation. *Panels and modules installed on residential buildings shall be located no less than 3 feet (914 mm) from the*

ridge in order to allow for fire department smoke ventilation operations.

Exception: *Panels and modules shall be permitted to be located up to the roof ridge where an alternative ventilation method approved by the fire chief has been provided or where the fire chief has determined vertical ventilation techniques will not be employed.*

> ***3111.2.3 Other than Group R-3 buildings.*** *Access to systems for buildings other than those containing Group R-3 occupancies shall be provided in accordance with Sections 3111.2.3.1 through 3111.2.3.3.*

Exception: *Where it is determined by the fire code official that the roof configuration is similar to that of a Group R-3 occupancy, the residential access and ventilation requirements in Sections 3111.2.2.1 through 3111.2.2.5 shall be permitted to be used.*

3111.2.3.1 Access*. There shall be a minimum 6- foot-wide (1829 mm) clear perimeter around the edges of the roof.*

Exception: *Where either axis of the building is 250 feet (76 200 mm) or less, the clear perimeter around the edges of the roof shall be a minimum 4-foot-wide (1290 mm).*

3111.2.3.2 Pathways. *The solar installation shall be designed to provide designated pathways. The pathways shall meet the following requirements:*

1. *The pathway shall be over areas capable of supporting the live load of fire fighters accessing the roof.*
2. *The centerline axis pathways shall be provided in both axes of the roof. Centerline axis pathways shall run where the roof structure is capable of supporting the live load of fire fighters accessing the roof.*
3. *Shall be a straight line not less than 4 feet (1290 mm) clear to roof standpipes or ventilation hatches.*
4. *Shall provide not less than 4 feet (1290 mm) clear around roof access hatch with at least one not less than 4 feet (1290 mm) clear pathway to parapet or roof edge.*

3111.2.3.3 Smoke ventilation. *The solar installation shall be designed to meet the following requirements:*

1. *Arrays shall be no greater than 150 feet (45 720 mm) by 150 feet (45 720 mm) in distance in either axis in order to create opportunities for fire department smoke ventilation operations.*
2. *Smoke ventilation options between array sections shall be one of the following:*

   2.1. *A 4-foot (1290 mm) or greater in width pathway and bordering roof skylights or gravity-operated dropout smoke and heat vents on not less than one side.*

   2.2. *A 4-foot (1290 mm) or greater in width pathway and bordering all sides of nongravity-operated dropout smoke and heat vents on not less than one side.*

   2.4. *A 4-foot (1290 mm) or greater in width pathway and bordering 4-foot by 8-foot (1290 mm by 2438 mm) "venting cutouts" every 20 feet (6096 mm) on alternating sides of the pathway.*

3111.3 Ground-mounted photovoltaic arrays. *Ground-mounted photovoltaic arrays shall comply with this section and the California Electrical Code. Setback requirements shall not apply to ground-mounted, free-standing photovoltaic arrays. A clear, brush-free area of 10 feet (3048 mm) shall be required for ground-mounted photovoltaic arrays.* <

CHAPTER 31B [DPH]

PUBLIC POOLS

Division I—GENERAL

SECTION 3101B
SCOPE

The provisions of this chapter shall apply to the construction, installation, renovation, alteration, addition, relocation, replacement or use of any public pool and to its ancillary facilities, mechanical equipment and related piping. Public pools include those located in or designated as the following: commercial building, hotel, motel, resort, recreational vehicle or mobile home park, campground, apartment house, condominium, townhouse, homeowner association, club, community building or area, public or private school, health club or establishment, water park, swim school, medical facility, bed and breakfast, licensed day-care facility, recreation and park district and municipal pools.

Note: *Existing law limits application of building standards. Please see Health and Safety Code Sections 18938.5 and 116050.*

[DSA-AC] *Refer to Chapter 11B for accessibility provisions applicable to public accommodations, commercial buildings and public housing.*

SECTION 3102B
DEFINITIONS

ANCILLARY FACILITY *is any area used in conjunction with or for the operation of a pool such as public dressing rooms, lockers, shower or bathroom areas, drinking fountains, equipment room, pool deck area, pool enclosure or building space that is intended to be used by pool users.*

BACKWASH *is the process of reversing the flow of water through the filter to thoroughly clean the filter media and/or elements and remove the debris from the contents of the filter vessel.*

CANTILEVERED DECKING *is the part of the deck which extends over a top edge of a pool or spa.*

CLEAN POOL WATER *is pool water that is free of dirt, oils, scum, algae, floating materials or visible organic and inorganic materials that would pollute the water.*

CLEAR POOL WATER *is pool water that is free from cloudiness and is transparent.*

COPING *is a slip-resistant cap installed on the top edge of a pool or spa.*

CORROSION RESISTANT *is capable of maintaining original surface characteristics under the prolonged influence of the use environment.*

DECK *is an area surrounding a pool which is specifically constructed or installed for use by pool users.*

DIATOMACEOUS EARTH *is a filtering media consisting of microscopic fossilized skeletons of diatoms.*

EASILY CLEANABLE *is a characteristic of a surface or material that allows removal of dirt, stains or residue by normal cleaning methods.*

EFFECTIVE PARTICLE SIZE *is the theoretical size of a sieve in mm that will pass 10 percent by weight of sand.*

ENFORCING AGENT *is the health officer, director of environmental health, registered environmental health specialist or environmental health specialist trainee.*

EQUIPMENT AREA *is an area where the recirculation system and all related appurtenances are located.*

HANDHOLD *is a structure located at or above the water line around the perimeter of the pool wall that allows a pool user to hold onto the poolside for support.*

INLET *is a fitting or fixture through which recirculated water enters the pool.*

LADDER *is a series of vertically separate treads or rungs either connected by vertical rail members or independently fastened to an adjacent vertical pool wall.*

LIVING UNIT *is any building or portion thereof that contains living facilities including provisions for sleeping.*

MAIN DRAIN *is a submerged suction outlet typically located at the bottom of a pool that conducts water to a recirculating pump.*

MEDICAL POOL *is a special-purpose pool used by a State-recognized medical institution engaged in the healing arts under the direct supervision of licensed medical personnel for treatment of the infirm.*

OUTLET *is a fitting or fixture through which recirculated water is removed from the pool which may or may not be connected to the pump.*

PERFORMANCE STANDARD *is a standard that is accredited and published. Products compliant with a standard may be listed by any authorized nationally recognized testing laboratory.*

PERIMETER OVERFLOW SYSTEM *is a system which includes perimeter-type overflow gutters, surge basin or similar surface water collective system components and their interconnecting piping.*

PERMISSIBLE EXPOSURE LIMIT *is the maximum amount or concentration of a chemical that a worker may be exposed to under United States Occupational Safety and Health Administration regulations.*

POOL OR PUBLIC POOL *is an artificial basin, chamber or tank constructed or prefabricated with impermeable surfaces that is used, or intended to be used, for public swimming, diving or recreational activities but does not include individual therapeutic tubs or baths where the main purpose is the cleaning of the body. Any manmade lake or swimming lagoon with a sand beach or sand bottom is not a public pool.*

POOL OPERATOR or OPERATOR *is a person who is responsible for maintaining compliance with all requirements relating to pool operation, maintenance and safety of pool users.*

POOL USER *is a person using a pool and ancillary facilities for the purpose of water activities such as diving, swimming or wading.*

RADIUS OF CURVATURE *is the radius arc which denotes the curved surface from the point of departure from the springline of the pool to the pool bottom.*

READILY ACCESSIBLE *is capable of being reached easily for cleaning, repair, replacement or inspection without the necessity of removing a panel, door or similar obstruction and without requiring a person to climb over or remove obstacles or to use devices such as portable ladders.*

READILY DISASSEMBLED *means capable of being taken apart by hand or by using only simple tools such as a screwdriver, pliers or open-end wrench.*

RECESSED STEPS *are a series of vertically spaced cavities in the pool wall creating riser and tread areas for pool ingress and egress.*

RECIRCULATION SYSTEM *is the system of hydraulic components designed to remove, filter, disinfect and return water to the pool.*

RIM FLOW GUTTER *is a perimeter overflow system in which the overflow rim is at the same elevation with the deck.*

SKIMMER EQUALIZER LINE *is a submerged suction outlet located below the waterline and connected to the body of a skimmer that prevents air from being drawn into the pump if the water level drops below the skimmer weir or the skimmer is blocked by debris. A skimmer equalizer line is not a main drain.*

SLIP RESISTANT *is a rough finish that is not abrasive to the bare foot.*

SPA POOL OR SPA *is a pool that incorporates a water jet system, an aeration system or a combination of the two systems used in conjunction with heated water.*

SPECIAL PURPOSE POOL *is a pool constructed exclusively for a specific purpose, such as instruction, diving, competition or medical treatment.*

SPLASH ZONE *is the maximum distance the water from a spray ground can project horizontally.*

SPRAY GROUND *is a pool with no standing water in the splash zone and consists of a surge basin with a recirculation system from which water is directed through water features for contact with pool users.*

SPRINGLINE *is the point from which the pool wall breaks from vertical and begins its arc in the radius of curvature.*

STAIRS *are a series of two or more steps.*

STEP *is a riser and tread.*

SUCTION OUTLET *is any outlet that is connected to the pump through which water is removed from the pool.*

SURGE BASIN *is a reservoir or surge trench open to the atmosphere that receives water via gravity flow from the main drain, spray ground or perimeter overflow system and from which the recirculation system operates.*

TEMPERED WATER *is water between 100°F and 110°F.*

TURNOVER TIME *is the maximum time allowed to circulate one complete volume of the pool water through the recirculation system.*

UNIFORMITY COEFFICIENT *is the ratio of the theoretical size of a sieve in mm that will pass 60 percent of the sand to the theoretical size of a sieve in mm that will pass 10 percent of the sand.*

WADING POOL *is a pool intended to be used for wading by small children and having a maximum water depth of 18 inches (457 mm) at the deepest point.*

WATER FEATURE *means an interactive device or structure through which water is directed to the pool user such as a water fountain, water spray, dancing water jet, waterfall, dumping bucket or shooting water cannon.*

WATERLINE *shall be defined as one of the following:*

1. ***Skimmer system.*** *The waterline shall be the midpoint of the operating range of the skimmers.*
2. ***Overflow system.*** *The waterline shall be the top edge of the overflow rim.*

PLAN REVIEW, PERMITS, CONSTRUCTION AND FIELD INSPECTIONS

SECTION 3103B PLAN REVIEW

3103B.1 *A person proposing to construct, renovate or alter a pool, ancillary facilities or equipment and appurtenances shall submit plans and specifications detailing compliance with this chapter to the enforcing agent for review and written approval prior to commencing construction and shall first be cleared by the enforcing agent before substitution if not an exact duplicate of the units being changed or replaced. A local building department shall not issue a permit for a public pool or ancillary facility until the plans have been approved by the enforcing agent.*

3103B.2 *Plans submitted for approval pursuant to this section shall be drawn to a scale of $^1/_4$ inch (6.4 mm) equals 1 foot (305 mm), except that plans for spa pools shall be drawn to a scale of 1 inch (25 mm) equals 1 foot (305 mm), unless otherwise approved by the enforcing agent.*

3103B.3 *The enforcing agent shall notify the person submitting the plans and specifications of approval or disapproval.*

3103B.4 *The enforcing agent shall retain one copy of the approved plans and specifications and any subsequent changes or modifications. The approved plans shall be valid for a period of two years from the date of approval or as extended by the enforcing agent.*

SECTION 3104B
CONSTRUCTION

Pools and all ancillary facilities, equipment and appurtenances shall be constructed, renovated or altered in compliance with plans approved pursuant to Section 3103B.

SECTION 3105B
PLAN COMPLIANCE INSPECTIONS

3105B *The pool owner, operator or designated agent shall notify the enforcing agent prior to scheduling the following inspections:*

1. *Exposed plumbing; and*
2. *Prior to applying pneumatically placed concrete; and*
3. *Prior to applying the final surface to the pool shell; and*
4. *At the completion of construction. No pool shall be opened to the public without the written approval of the enforcing agent.*

POOL STRUCTURE

SECTION 3106B
SPECIAL REQUIREMENTS FOR SPRAY GROUNDS

3106B Spray grounds. *All applicable provisions of this chapter shall apply to a spray ground unless specifically addressed in this section.*

3106B.1 *All parts of the spray ground shall be designed and constructed so that there are no safety hazards.*

3106B.2 Walking surface. *A minimum 4-foot wide walking surface shall extend around the perimeter of the splash zone of a spray ground.*

3106B.3 *The recirculation system shall be in operation at all times that the spray ground is open for use and shall have a minimum of four turnover cycles prior to opening for proper disinfection and filtration.*

3106B.4 *There shall be no standing water within the splash zone.*

3106B.5 *Nozzles that spray from the ground level shall be flush with the ground with openings no greater than $^1/_2$ inch. Spray ground water features that extend above the ground must be clearly visible.*

3106B.6 *The splash zone shall be sloped so that only water from the spray ground water feature flows back to the surge basin. Areas adjacent to the splash zone shall be sloped away from the spray ground to deck drains or other surface water disposal systems.*

3106B.7 *All foggers and misters that produce finely atomized mists shall be supplied directly from a potable water source and not from the surge basin.*

3106B.8 *When multiple pumps are used the control systems for the spray ground water feature pump and recirculation system pump shall be electrically interconnected so that when the recirculation pump is off the spray ground water feature pump also is off.*

3106B.9 *The spray ground shall have a surge basin or treatment tank constructed of materials which are inert, corrosion resistant, nontoxic and watertight including materials such as concrete, fiberglass, high density polyethylene, stainless steel or other materials as approved by the enforcing agent which can withstand all anticipated loadings under full and empty conditions as determined by an engineer or architect who has experience working on public pools.*

3106B.10 *The total volume of the surge basin shall be at least 4,000 gallons or a minimum of three times the gallons per minute flow rate of all the spray ground pumps and the recirculation pump combined, whichever is higher.*

3106B.11 *The turnover time shall be one-half hour or less.*

3106B.12 *The suction intake for the spray ground or water feature pump in the surge basin shall be located adjacent to the recirculation return line.*

3106B.13 *When separate pumps are used, the suction intake for the recirculation pump shall be located in the lowest portion of the surge basin and on the opposite side from the suction intake for the spray ground pump.*

3106B.14 *The surge basin shall be designed to have easy access for cleaning and inspection. The basin shall have at least one ladder access and shall have at least one 3-foot by 3-foot access opening. Lids shall be locked or require a tool to open.*

3106B.15 *The surge basin shall be equipped with an automatic make up water fill device through an air gap or be protected by an approved backflow prevention device in accordance with Chapter 6 of the California Plumbing Code.*

3106B.16 *Ultraviolet light disinfection shall be used to supplement disinfection methods required in this chapter unless another treatment process is provided that has been determined by a nationally recognized testing laboratory to be capable of providing at least the equivalent level of reduction of cryptosporidium as the ultraviolet light disinfection system specified in this section. The ultraviolet light disinfection unit shall comply with the applicable requirements established by the NSF/ANSI 50-2010 performance standard effective August 2010.*

3106B.17 *An accurately calibrated ultraviolet light intensity meter that has been properly filtered to restrict its sensitivity to the disinfection spectrum shall be installed in the wall of the disinfection chamber at the point of greatest water depth from the light source.*

3106B.18 *The ultraviolet light unit shall be located on the recirculation system and shall be installed to provide treated water directly to the spray features.*

3106B.19 *The ultraviolet light disinfection system must be equipped with an automatic shutdown system that inactivates the water feature pump if the ultraviolet dosage rate drops below 40 mJ/cm^2.*

3106B.20 *Artificial lighting shall be provided at all spray ground pads which are used at night or which do not have adequate natural lighting so that all portions of the spray pad and deck may be seen easily. Lighting that may be exposed to the feature pool water shall be installed in accordance with the manufacturer's specifications and the California Electrical Code.*

3106B.21 *A means of diverting runoff from the splash zone shall be installed on the spray ground drainage piping before the surge basin to divert water to the storm drainage system when the spray ground is not in operation.*

3106B.22 *A removable and cleanable catch screen or basket shall be installed on the spray ground drainage system before it enters the reservoir to prevent larger debris from collecting in the surge basin.*

SECTION 3107B
ALTERNATIVE EQUIPMENT, MATERIALS AND METHODS OF CONSTRUCTION

3107B.1 *The enforcing agent may approve an alternative equipment, material or method of construction provided it finds that the proposed design is satisfactory and complies with the provisions of this chapter, that the equipment, material, method or work offered is, for the purpose intended, at least equivalent to that prescribed in suitability, strength, effectiveness, fire resistance, durability, safety and sanitation or that the methods of installation proposed conform to other acceptable nationally recognized standards.*

3107B.2 *The enforcing agent shall require that sufficient evidence or proof be submitted to substantiate claims that may be made regarding the use of alternative equipment, material or method of construction.*

3107B.3 *Whenever there is insufficient evidence of compliance with the provisions of this chapter, the enforcing agent may require tests as proof of compliance to be made at no expense to the enforcing agent. Tests shall be made in accordance with approved standards, but in the absence of such standards the enforcing agent may specify the test procedure.*

SECTION 3108B
POOL CONSTRUCTION

3108B.1 Pool shell. *The pool shall be built of reinforced concrete or material equivalent in strength, watertight and able to withstand anticipated stresses under both full and empty conditions taking into consideration factors such as climatic effects, geological conditions and integration of the pool with other structures.*

3108B.2 Finish. *The finished pool shell shall be lined with a smooth waterproof interior finish that will withstand repeated brushing, scrubbing and cleaning procedures. The interior pool finish shall completely line the pool to the tile lines, coping, or cantilevered deck.*

3108B.3 Finish color. *The finish color shall be white except for the following which shall be of contrasting color:*

1. *Lane and other required pool markings described in Section 3110B; and*
2. *The top surface edges of benches in spa pools; and*
3. *The edge of pool steps; and*
4. *Tiles installed at the 4$^1/_2$-foot (1372 mm) depth line.*

> ***Exception:*** *A spa pool may be finished in a light color other than white when approved by the enforcing agent.*

3108B.4 Projections and recessed areas. *The pool shell shall not have projections or recessed areas except for pool inlets and outlets as specified in Section 3137B.*

> ***Exception:*** *This section shall not apply to handholds, recessed steps, ladders, stairs, handrails, skimmers or perimeter overflow systems.*

SECTION 3109B
POOL GEOMETRY

3109B.1 General. *A pool shall conform to the appropriate criteria in Figures 31B-1 through 31B-7.*

> ***Exception:*** *A special purpose pool may be exempted from construction standards that are not applicable to the proposed use.*

3109B.2 Dimensional tolerances. *A construction tolerance shall be permitted on all dimensions in Figures 31B-1 through 31B-3 not to exceed 2 inches (51 mm) except that the tolerance of the water level of a pool with a nonadjustable overflow system shall not exceed $^1/_8$ inch (3.2 mm).*

3109B.3 Bottom slope break. *Any portion of a pool having a water depth of 4$^1/_2$ feet (1372 mm) or less shall have a uniform slope that shall not exceed 1 foot (305 mm) of vertical in 10 feet (3050 mm) of horizontal. In pools with water depths greater than 4$^1/_2$ feet (1372 mm) the slope shall meet the requirements in Figures 31B-1 through 31B-3. There shall be a uniform water depth along the entire base of the stairs.*

SECTION 3110B
PERMANENT MARKINGS

3110B.1 General. *No markings, designs or lettering shall be permitted on the pool shell except for slip resistant lane markings, depth marking lines and safety markings.*

3110B.2 Lane markings. *Slip resistant lane lines at the bottom of the pool shall not exceed 12 inches (305 mm) in width.*

3110B.3 Depth marking line. *There shall be installed a straight line of slip resistant tile a minimum of 4 inches (102 mm) and not greater than 6 inches (152 mm) wide of a color contrasting with the background of the pool shell across the bottom of the pool where the water depth is $4^1/_2$ feet (1372 mm).*

Exception: *Pools having a maximum water depth of 5 feet (1524 mm) or less shall not be required to have a depth marking line.*

3110B.4 Water depth markers.

3110B.4.1 Location. *The water depth shall be clearly marked at the following locations:*

1. *Maximum depth; and*
2. *Minimum depth; and*
3. *Each end; and*
4. *Both sides at the shallowest and deepest part of the pool; and*
5. *At the break in the bottom slope between the shallow and deep portions of the pool (see also Section 3109B.3); and*
6. *Along the perimeter of the pool at distances not to exceed 25 feet (7620 mm).*

   Exception: *A spa or wading pool shall have a minimum of two depth markers indicating the maximum depth.*

Note: *For an illustration diagram pertaining to this section see Figure 31B-8.*

3110B.4.2 Position. *Where required by Section 3110B.4.1, depth markers shall be located in the following positions:*

1. *On the coping or on the deck, the depth markers shall be placed as close as possible but no more than 3 feet (914 mm) from the pool water; and*
2. *For pools with skimmer systems the depth markers shall be high at the waterline which typically will result in the depth markers being submerged approximately 50 percent; or*
3. *For pools with perimeter overflow systems where coping cantilevers over the gutter depth markers may be positioned at the face of the cantilevered coping, the back wall above the gutter or immediately below the waterline which will result in the depth markers being completely submerged; or*
4. *For pools with rim flow gutters, depth markers shall be positioned immediately below the waterline which will result in the depth markers being completely submerged.*

3110B.4.3 Tolerance. *Depth markers shall be positioned to indicate the water depth accurate to the nearest 6 inches (152 mm) as measured at the waterline.*

3110B.4.4 Size of markers. *Depth markers shall:*

1. *Have numerals a minimum of 4 inches (102 mm) in height and of a color contrasting with the background and be marked in units of feet and inches. Abbreviations of FT and IN may be used in lieu of feet and inches; and*
2. *Be made of a durable material that is resistant to weathering; and*
3. *Be slip resistant when they are located on the pool deck.*

3110B.5 No diving markers. *For pool water depths 6 feet (1830 mm) or less no diving markers with the universal symbol of no diving, which is a red circle with a slash through it superimposed over the image of a diver, shall be installed on the deck directly adjacent to the depth markers required by Section 3110B.4.1. No diving markers shall comply with Section 3110B.4.4(2-3).*

SECTION 3111B
STEPS, RECESSED STEPS, LADDERS AND STAIRS

3111B.1 Construction. *A means of entry and exit to and from the pool shall consist of steps, recessed steps, ladders, stairs, ramps or a combination of these. Stairs or ramps shall be provided in the shallowest portion of a pool if the vertical distance from the bottom of the pool to the deck is over 1 foot (305 mm). In pools with more than one shallow end, stairs or ramps shall be provided at a minimum at one shallow end. A second means of entry and exit shall be provided in the deep portion of a pool having a depth greater than $4^1/_2$ feet (1372 mm). Where the width of the pool exceeds 30 feet (9144 mm), such means of entry and exit shall be provided at each side, not more than 100 feet (30,480 mm) apart.*

Note: *For illustrated diagrams pertaining to this section see Figures 31B-6 and 31B-7.*

3111B.2 Ladders. *Ladders shall be corrosion resistant and shall be equipped with slip resistant tread surfaces. Ladders shall be rigidly installed and shall provide a clearance of not less than 3 inches (76 mm) or more than 5 inches (127 mm) between any part of the ladder and the pool wall.*

3111B.3 Stairs. *Each step of a stair shall have a tread in accordance with Figure 31B-7. Risers shall conform to Figure 31B-7. At least one hand rail shall be provided extending from the deck to not less than a point above the top of the lowest step installed in accordance with Figure 31B-7.*

3111B.4 Ladder and recessed step dimensions. *Ladder treads and recessed steps shall have a minimum tread of 5 inches (127 mm) and a width of 14 inches (356 mm) and shall be designed to be readily cleaned. Step risers shall be uniform and shall not exceed 12 inches (305 mm) in height. The first riser shall be measured from the deck.*

3111B.5 Handrails for ladders and recessed steps. *Handrails shall be provided at the top of both sides of each ladder and recessed steps and shall extend over the coping or edge of the deck.*

3111B.6 Handrails for spas. *Two hand rails shall be provided extending from the deck to not less than a point above the top of the lowest step in accordance with Figure 31B-7. The steps shall be located where the deck is at least 4 feet (1219 mm) wide.*

3111B.7 Dimensional tolerances. *Finished step tread and riser construction tolerances shall be + $^1/_2$ inch (12.5 mm).*

[DSA-AC] *Additional requirements may apply. Refer to Chapter 11B for accessibility provisions applicable to public accommodations, commercial buildings and public housing.*

SECTION 3112B
HANDHOLDS

3112B.1 General. *Every pool shall be provided with handholds (perimeter overflow system, bull-nosed coping or cantilevered decking) around the entire perimeter installed not greater than 9 inches (229 mm) above the waterline.*

Exception: *Handholds are not required for wading pools.*

3112B.2 *For special purpose pools used for instruction or competitive swimming, a handhold at water level similar to the rim of a perimeter overflow system is required.*

3112B.3 *Where perimeter overflow systems are not provided, a bull-nosed coping or cantilevered decking of reinforced concrete, or material equivalent in strength and durability, with rounded slip resistant edges shall be provided. The overhang for either bull-nosed coping or cantilevered decking shall not exceed 2 inches (51 mm) or be less than 1 inch (25 mm) and shall not exceed 2$^1/_2$ inches (64 mm) in thickness.*

Exception: *The enforcing agent may accept other handholds for spa pools.*

SECTION 3113B
DIVING BOARDS AND PLATFORMS

3113B.1 General. *Diving boards and platforms shall be anchored to the pool deck, constructed of corrosion resistant material, designed and constructed to be easily cleanable and finished with a durable slip resistant material.*

3113B.2 Rails and steps. *Diving boards or platforms greater than 18 inches (456 mm) in height above the deck shall be provided with a ladder or stairs for access. Hand rails shall be provided at all ladders and stairs leading to diving boards or platforms more than 1 meter above the water. Diving boards and platforms that are over 1 meter above the water shall have guard rails on both sides of the diving board or platform that extend to a point on the platform directly above the water's edge. Guard rails shall be 36 inches (914 mm) above the diving board or platform.*

3113B.3 Dimensions. *Dimensions and clearances for the use of diving boards or platforms shall conform to those shown in Figures 31B-1 and 31B-2. Platforms and diving boards shall conform to the USA Diving Rules and Codes, Part 1, Subpart A and Appendix B, effective January 1, 2010.*

SECTION 3114B
POOL DECKS

3114B.1 General. *A minimum continuous and unobstructed 4-foot wide (1219 mm) slip resistant, cleanable, nonabrasive deck area of concrete or like material shall be provided flush with the top of the pool coping extending completely around the pool, and the deck area shall further extend 4 feet (1219 mm) on both sides and rear of any diving board, fixed disabled access assistance device or slide and their appurtenances. The deck width shall be measured from the poolside edge of the coping lip.*

Exception: *A deck at least 4 feet (1219 mm) in width shall extend around a continuous 50 percent or more of the perimeter of a spa pool.*

3114B.2 Deck between pools and/or spas. *Where multiple pools and/or spas are built adjacent to each other, the deck width separating them shall be a minimum of 6 feet (1830 mm).*

3114B.3 Deck slope. *The pool's deck surface shall have a slope of no less than 1 percent ($^1/_8$ inch per foot) but no more than 2 percent ($^1/_4$ inch per foot) away from the pool to a deck drainage system and shall be constructed and finished to prevent standing water.*

3114B.4 Deck covering. *Deck coverings or other materials that are not equivalent to concrete in strength, durability and slip resistance and are not able to withstand repeated brushing, scrubbing or cleaning procedures shall not be installed or used within 4 feet (1219 mm) of the pool.*

3114B.5 Unpaved areas. *Landscape plants, flower beds or similar unpaved areas shall not be located within 4 feet (1219 mm) of a spa pool.*

SECTION 3115B
POOL LIGHTING

3115B.1 General. *Pools shall have underwater and deck lighting such that lifeguards or other persons may observe, without interference from direct and reflected glare from the lighting sources, every part of the underwater area and pool surface, all diving boards or other pool appurtenances. If underwater or deck surface lighting is not operational, the operator of the pool shall secure the pool area and not permit any use of the pool after dark and shall post the same sign as required in Section 3120B.9.*

Note: *See Part 3, Article 3-680, Title 24, California Code of Regulations for electrical installation requirements.*

3115B.2 Nighttime use. *Pools used at night shall be equipped with underwater lighting fixtures that will provide complete illumination to all underwater areas of the pool with no blind*

spots. Illumination shall enable a lifeguard or other persons to determine whether:

1. *A pool user is lying on the bottom of the pool; and*
2. *The pool water conforms to the definition of "clear pool water."*

Exception: *Pools provided with a system of overhead lighting fixtures where it can be demonstrated to the enforcing agent that the system is equivalent to the underwater lighting fixture system.*

3115B.3 Deck area lighting. *When the pool is to be used at night, pool deck areas and emergency egress areas shall be provided with lighting so that persons walking on the deck can identify hazards. Lighting fixtures shall be aimed towards the deck area and away from the pool surface insofar as practical.*

ANCILLARY FACILITIES

SECTION 3116B
> DRESSING, SHOWER AND TOILET FACILITIES

3116B.1 *Shower and dressing facilities shall be provided for users of a pool.*

Exceptions:

1. *Shower and dressing facilities may not be required when pool users have access to such facilities in adjacent living quarters.*
2. *Public toilet facilities may be omitted when pool users have access to toilet facilities either in living quarters located not more than 300 feet (91,440 mm) in travel distance from the pool or in an adjacent building such as a recreational facility, clubhouse or cabana.*

3116B.2 Number of sanitary facilities. *For the purpose of this subsection, one pool user shall be considered for every 15 square feet (1.39 m^2) of pool water surface area and/or spray ground splash zone area.*

3116B.2.1 Showers. *One shower shall be provided for every 50 pool users.*

3116B.2.2 Toilets. *Separate toilet facilities shall be provided for each sex. One toilet shall be provided for every 60 women or less and one toilet plus one urinal for every 75 men or less.*

3116B.2.3 Lavatories. *One lavatory shall be provided for every 80 pool users.*

3116B.3 Construction.

3116B.3.1 Floors. *Floors shall have a hard, nonabsorbent surface, such as portland cement concrete, ceramic tile or other approved material, which extends upwards onto the wall at least 5 inches (127 mm) with a coved base. Floors which may be walked on by a wet pool user shall be slip resistant. Floors shall be sloped not less than $^1/_4$ inch (6.4mm) per foot to floor drains or other approved surface water disposal areas. Carpeting and other similar artificial floor covering shall not be permitted on shower and toilet room floors.*

3116B.3.2 Interior surfaces. *The materials used in the walls, except for structural elements, shall be of a type which is not adversely affected by moisture.*

3116B.3.3 Privacy. *All doors and windows shall be arranged to prevent viewing of the interior from any portion of the building used by the opposite sex and from view from the outdoors. View screens shall be permitted for this purpose.*

3116B.4 Water supply.

3116.B.4.1 *Showers and lavatories shall be provided with hot and cold water faucets.*

3116B.4.2 *Tempered water shall be permitted in lieu of individual hot and cold water faucets.*

3116B.4.3 *A means to limit the hot water to 110°F (43°C) maximum shall be provided to prevent scalding. This temperature limit control shall not be adjustable by the pool user.*

SECTION 3117B
DRINKING FOUNTAINS

One guarded jet drinking fountain shall be provided for the first 250 pool users and an additional fountain shall be provided for each additional 200 pool users or fraction thereof. The number of pool users shall be determined according to Section 3116B.2.

Exception: *Drinking fountains shall not be required when drinking water is available at adjacent living quarters, or in an adjacent building such as a bathhouse, cabana, clubhouse or recreational facility.*

SECTION 3118B
HOSE BIBBS

Potable water outlets with hose attachments shall be protected by a nonremovable hose bibb backflow preventer, a nonremovable hose bibb vacuum breaker or by an atmospheric vacuum breaker installed not less than 6 inches (152 mm) above the highest point of usage located on the discharge side of the last valve as required by the California Plumbing Code. In climates where freezing temperatures occur, a listed self-draining frost-proof hose bibb with an integral backflow preventer or vacuum breaker shall be used. Hose bibbs shall be provided so that all portions of the pool deck area may be reached with a 75 foot length of hose attached to the hose bibb. A hose bibb shall be provided in the equipment area. Hose bibbs shall be located so that they do not constitute a hazard.

SECTION 3119B
POOL ENCLOSURE

3119B.1 Enclosure. *The pool shall be enclosed by one or a combination of the following: a fence, portion of a building, wall, or other approved durable enclosure. Doors, windows,*

gates of living units or associated private premises shall not be permitted as part of the pool enclosure. The enclosure, doors and gates shall meet all of the following specifications:

1. *The enclosure shall have a minimum effective perpendicular height of 5 feet (1524 mm) as measured from the outside as depicted in Figure 31B-4; and*
2. *Openings, holes or gaps in the enclosure, doors and/or gates shall not allow the passage of a 4-inch (102 mm) diameter sphere. The enclosure shall be constructed over a hard and permanent material equivalent to concrete; and*
3. *The enclosure shall be designed and constructed so that it cannot be readily climbed by small children. Horizontal and diagonal member designs which might serve as a ladder for small children are prohibited. Horizontal members shall be spaced at least 48 inches (1219 mm) apart. No planters or other structures that can be climbed shall be permitted within 5 feet (1524 mm) of the outside of the pool enclosure or within a 5 foot (1524 mm) arc as depicted in Figure 31B-5. The area 5 feet (1524 mm) outside of the pool enclosure shall be a common area open to the public; and*
4. *Chain link may be used, provided that the openings are not greater than $1^3/_4$ inches (44 mm) measured horizontally.*

3119B.2 Gates. *Gates and doors opening into the pool enclosure also shall meet the following specifications:*

1. *Gates and doors shall be equipped with self-closing and self-latching devices. The self-latching device shall keep the gate or door securely closed. Gates and doors shall open outwardly away from the pool except where otherwise prohibited by law. Hand activated door or gate opening hardware shall be located at a height no lower than 42 inches (1067 mm) but no higher than 44 inches (1179 mm) above the deck or walkway; and*
2. *Gates and doors shall be capable of being locked during times when the pool is closed. Exit doors which comply with Chapter 10, Title 24, California Code of Regulations shall be considered as meeting these requirements; and*
3. *The pool enclosure shall have at least one means of egress without a key for emergency purposes. Unless all gates or doors are so equipped, those gates and/or doors which will allow egress without a key shall have a sign in letters at least 4 inches (102 mm) high stating EMERGENCY EXIT; and*
4. *The enclosure shall be constructed so that all persons will be required to pass through common pool enclosure gates or doors in order to gain access to the pool area. All gates and doors exiting the pool area shall open into a public area or a walkway accessible by all patrons of the pool.*

3119B.3 Retroactivity. *Sections 3119B.1 and 3119B.2 shall apply only to public pool enclosures constructed on or after July 1, 1994. Notwithstanding the foregoing effective date, no fence enclosure shall be less than 4 feet (1219 mm) in height.*

3119B.4 Enclosure of pools constructed prior to July 1, 1994. *The enforcing agent may allow the installation of an enclosure which reduces the pool deck to less than 4 feet (1219 mm) in width when the physical characteristics of a site preclude providing a 4-foot (1219 mm) wide deck around the perimeter of an existing pool.*

SECTION 3120B
REQUIRED SIGNS

3120B.1 General. *All signs shall have clearly legible letters or numbers not less than 4 inches (102 mm) high, unless otherwise required in this section, affixed to a wall, pole, gate or similar permanent structure in a location visible to all pool users.*

3120B.2 Pool user capacity sign. *A sign shall indicate the maximum number of pool users permitted for each pool.*

3120B.2.1 Spa pool. *The pool user capacity of a spa pool shall be based on one pool user for every 10 square feet (0.929 m^2) of pool water surface area.*

3120B.2.2 Other pools. *The pool user capacity for all other pools shall be based on one pool user for every 20 square feet (1.858 m^2) of pool water surface area.*

> ***Exception:*** *Pool user capacity requirements do not apply to wading pools or spray grounds.*

3120B.3 No diving sign. *Signs shall be posted in conspicuous places and shall state, "NO DIVING" at pools with a maximum water depth of 6 feet or less.*

3120B.4 No lifeguard sign. *Where no lifeguard service is provided, a sign shall be posted stating, "NO LIFEGUARD ON DUTY." The sign also shall state in letters at least 1 inch (25 mm) high, "Children under the age of 14 shall not use pool without a parent or adult guardian in attendance."*

> ***Exception:*** *"No lifeguard sign" requirement does not apply to spray grounds that have no standing water.*

3120B.5 Artificial respiration and cardiopulmonary resuscitation sign. *An illustrated diagram with text at least $^1/_4$ inch (6 mm) high of artificial respiration and cardiopulmonary resuscitation procedures shall be posted.*

3120B.6 Emergency sign. *The emergency telephone number 911 with numbers not less than 4 inches (102 mm), the number of the nearest emergency services and the name and street address of the pool facility with numbers and text not less than 1 inch (25 mm) shall be posted.*

3120B.7 Warning sign for a spa pool. *A warning sign for spa pools shall be posted stating, "CAUTION" and shall include the following language in letters at least 1 inch (25 mm) high:*

1. *Elderly persons, pregnant women, infants and those with health conditions requiring medical care should consult with a physician before entering the spa.*
2. *Unsupervised use by children under the age of 14 is prohibited.*
3. *Hot water immersion while under the influence of alcohol, narcotics, drugs or medicines may lead to serious consequences and is not recommended.*

4. *Do not use alone.*
5. *Long exposure may result in hyperthermia, nausea, dizziness or fainting.*

3120B.8 Emergency shut off. *In letters at least one inch (25 mm) high a sign shall be posted at the spa emergency shut off switch stating, "EMERGENCY SHUT OFF SWITCH."*

3120B.9 No use after dark. *Where pools were constructed for which lighting was not required, a sign shall be posted at each pool entrance on the outside of the gate(s) stating, "NO USE OF POOL ALLOWED AFTER DARK."*

3120B.10 Keep closed. *A sign shall be posted on the exterior side of gates and doors leading into the pool enclosure area stating, "KEEP GATE CLOSED." or "KEEP DOOR CLOSED."*

[DSA-AC] *Additional requirements may apply. Refer to Chapter 11B for accessibility provisions applicable to public accommodations, commercial buildings and public housing.*

3120B.11 Diarrhea. *A sign in letters at least 1 inch (25 mm) high and in a language or diagram that is clearly stated shall be posted at the entrance area of a public pool which states that persons having currently active diarrhea or who have had active diarrhea within the previous 14 days shall not be allowed to enter the pool water.*

3120B.12 Wave pools. *A sign in letters at least 1 inch (25 mm) high shall be posted that describes the requirements for wave pools as described in Section 115952, Health and Safety Code.*

3120B.13 Spray ground sign. *A sign shall be posted at each spray ground and be visible from any part of the spray ground that states, "CAUTION: WATER IS RECIRCULATED. DO NOT DRINK."*

3120B.14 Exit. *Where automatic gaseous chlorine chemical feeders are used, a sign shall be posted at the pool area entrance which shows in a diagrammatic form an emergency evacuation procedure. Designated emergency exits shall be marked "EXIT."*

3120B.15 Gaseous oxidizer. *Where automatic gaseous chlorine chemical feeders are used, a warning sign with the appropriate hazard identification symbol shall be posted on the exterior side of the door entering the chemical feeder room or area. The sign shall state, "DANGER: GASEOUS OXIDIZER - (specific chemical name)" or as otherwise required by the California Fire Code.*

3120B.16 Turn on before entering. *Where automatic gaseous chemical feeders are used, a sign shall be posted at the switch to the light and ventilation system for the gaseous chemical feeder room stating, "TURN ON BEFORE ENTERING," or as otherwise required by the California Fire Code or the California Electrical Code.*

3120B.17 Direction of flow.

3120B.17.1. *The direction of flow for the recirculation equipment shall be labeled clearly with directional symbols such as arrows on all piping in the equipment area.*

3120B.17.2. *Where the recirculation equipment for more than one pool is located on site, the equipment shall be marked as to which pool the system serves.*

3120B.17.3. *Valves and plumbing lines shall be labeled clearly with the source or destination descriptions.*

SECTION 3121B
INDOOR POOL VENTILATION

Indoor pools, dressing rooms and toilet rooms shall be ventilated according to the requirements in Chapter 4 of the California Mechanical Code.

SECTION 3122B
POOL EQUIPMENT ENCLOSURE

For pools constructed on or after January 1, 2013, pool equipment shall be enclosed as follows:

1. *All equipment installed for recirculation, filtration and disinfection of pool water shall be installed so that access is limited to persons authorized by the pool owner or operator; and*
2. *Pool equipment shall be mounted on a continuous slab of concrete or other equivalent easily cleanable and nonabsorbent material; and*
3. *Floors shall be sloped a minimum of $^1/_4$ inch (6.4 mm) per foot to a drain.*

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SECTION 3123B
GENERAL REQUIREMENTS

3123B.1 System description. *Each pool shall be provided with a separate recirculation system designed for the continuous recirculation, filtration and disinfection of the pool water. The system shall consist of pumps, filters, chemical feeders, skimmers or perimeter overflow systems, valves, pipes, connections, fittings and appurtenances.*

Exception: *Pools using fresh water equivalent in flow to the requirements of Section 3124B.*

Note: *Fresh makeup pool water shall conform to the water quality standards of Section 65531, Chapter 20, Title 22, California Code of Regulations.*

3123B.2 Equipment. *All pumps, filters, chemical feeders, skimmers and supplemental equipment shall comply with the applicable requirements established by the NSF/ANSI 50-2012 performance standard effective September 2012.*

3123B.3 Installation. *All equipment related to pool operations shall be installed and maintained according to this chapter and in accordance with the equipment manufacturer's written instructions.*

3123B.4 Equipment access. *All filters, valves, pumps, strainers and equipment shall be readily accessible for repair and replacement.*

SECTION 3124B
TURNOVER TIME

The recirculation system shall have the capacity to provide a complete turnover of pool water in:

1. *One-half hour or less for a spa pool; and*
2. *One-half hour or less for a spray ground; and*
3. *One hour or less for a wading pool; and*
4. *Two hours or less for a medical pool; and*
5. *Six hours or less for all other types of public pools.*

SECTION 3125B
RECIRCULATION PIPING SYSTEM AND COMPONENTS

3125B.1 Line sizes. *Pipes shall be sized so flow velocity of piping systems including all pipes and fittings other than inlet devices or venturi throats shall not exceed 6 feet per second (1.829 m/s) in any suction or copper piping and 8 feet per second (2.438 m/s) in any portion of the return system.*

3125B.1.1 Materials. *All piping, tubing and fittings shall comply with the applicable standards for potable water system materials set forth in Chapter 6 of the California Plumbing Code.*

3125B.2 Gauges. *A pressure and vacuum gauge shall be provided for each pump system. Each gauge shall have a scale range approximately $1^1/_4$ times the maximum anticipated working pressure or vacuum and shall be accurate within 2 percent of scale. The pressure gauge located on the filter shall be marked with the clean start up pressure reading.*

3125B.3 Flow meter. *A flow meter shall be provided on each recirculation system accurate to within 10 percent of flow and installed according to the manufacturer's written instructions with increments in the range of normal flow.*

3125B.4 Basket strainer. *A basket strainer shall be provided on the suction side of the recirculation pump. A basket strainer will not be required on pumps connected to vacuum filters where the filter elements are not removed for cleaning.*

3125B.5 Backwash piping. *Piping, including necessary valves conforming to Section 3125B.1, shall be provided for each filter vessel or element which requires periodic backwashing.*

3125B.6 Valves. *Valves shall not be located in any deck area surrounding a pool. Valves shall be installed on all recirculation, backwashing and drain system lines which require shutoff isolation, adjustment or control of the rate of flow. Each valve shall be installed in the equipment area and labeled as to its purpose.*

SECTION 3126B
RECIRCULATION PUMP CAPACITY

3126B.1 *Pool recirculation pumps shall have the following total dynamic head capacities:*

1. ***Pressure diatomaceous earth filters.*** *At least 60 feet (18,288 mm); and*
2. ***Vacuum diatomaceous earth filters.*** *Twenty inches (508 mm) vacuum on the suction side and 40 feet (12,192 mm) total dynamic head;and*
3. ***Rapid sand filters.*** *At least 45 feet (13,716 mm); and*
4. ***High rate sand filters.*** *At least 60 feet (18,288 mm); and*
5. ***Cartridge filters.*** *At least 60 feet (18,288 mm).*

3126B.2. *Pumps with other total dynamic head capacities shall be permitted provided the turnover times are maintained as required in Section 3124B.*

SECTION 3127B
WATER SUPPLY INLETS

3127B.1 General. *Each pool shall be supplied with potable water by means of a permanently installed pipeline from a public water supply system holding a permit from the California Department of Public Health or from a source approved by the enforcing agent.*

3127B.2 Backflow prevention. *There shall be no direct connection between any potable water supply system and the pool or its piping system unless protected by a backflow prevention device in accordance with Chapter 6 of the California Plumbing Code.*

3127B.3 Makeup water. *Automatic makeup water flow controls with a manual override control shall be provided to maintain the proper pool water level.*

SECTION 3128B
FILTERS (ALL TYPES)

3128B.1 General requirements. *All filters, regardless of type, shall be designed and constructed according to the applicable requirements established by the NSF/ANSI 50-2012 performance standard effective September 2012.*

3128B.2 Installation. *Each filter vessel shall be installed, piped and provided with valves so that it can be isolated from the recirculation system for repairs and backwashing.*

SECTION 3129B
RAPID SAND PRESSURE FILTERS

In addition to the requirements for all filters as indicated in Section 3128B, the following apply to rapid sand pressure filters.

3129B.1 Flow rates. *The filtration rate shall not exceed 3 gallons per minute per square foot (122.24 L/m per m²) of filter*

area. The backwash rate shall not be less than 15 gallons per minute per square foot (611.2 L/m per m²) of filter area.

3129B.2 Filter media. *The filter shall contain not less than a 20-inch (508 mm) depth of media and not less than a 10-inch (254 mm) depth of filter gravel above the underdrain system.*

3129B.2.1 *The filter media shall have an effective particle size between 0.40 and 0.55 millimeters and a uniformity coefficient not exceeding 1.75.*

3129B.2.2 *The filter gravel shall be sized and placed to provide uniform flow distribution from the underdrain system and to support the bed of filter sand without loss of sand to the pool or without development of jet streams or channeling in the filtration media.*

SECTION 3130B
DIATOMACEOUS EARTH FILTERS

In addition to the requirements for all filters as indicated in Section 3128B, the following applies to diatomaceous earth filters.

3130B.1 Flow rates. *The filtration rate for both pressure and vacuum diatomaceous earth filters shall not exceed 2 gallons per minute per square foot (81.49 L/m per m²) of filter area.*

SECTION 3131B
HIGH-RATE SAND FILTERS

In addition to the requirements for all filters as indicated in Section 3128B, the following apply to high rate sand filters.

3131B.1 Flow rates. *Maximum and minimum flow rates for backwash and filtration shall be maintained according to the applicable requirements established by the NSF/ANSI 50-2010 performance standard effective August 2010.*

3131B.2 *The filter media shall have an effective particle size between 0.40 and 0.55 mm and a uniformity coefficient not exceeding 1.75.*

3131B.3 *The backwash rate for a high rate sand filter shall be a minimum of 15 gallons per minute per square foot of filter area.*

SECTION 3132B
CARTRIDGE FILTERS

In addition to the requirements for all filters as indicated in Section 3128B, the following apply to cartridge filters.

3132B.1 *The filtration rate shall not exceed 0.375 gallons per minute per square foot of filter area.*

3132B.2 *An approved wash down area equipped with potable water shall be provided in the pool equipment area with permanently installed drainage piping discharging to the public sewer or wastewater system approved by the enforcing wastewater agency. The filter vessel shall be capable of being drained and shall be equipped with an indirect drain for the purpose of draining the entire contents of the filter vessel. Drainage and backwash piping shall be considered indirect waste and installed in accordance with the requirements of Chapter 8 of the California Plumbing Code.*

3132B.3 *An additional set of filter elements shall be available for installation while the existing filter elements are cleaned.*

SECTION 3133B
CHEMICAL FEEDERS

All chemical feeders including disinfectant feeders and the auxiliary feeders used for solutions, slurries or solids, along with components such as pumps, strainers, tubing connections, tanks and injection fittings shall comply with the provisions of this section.

3133B.1 General design requirements. *The chemical feeder equipment shall:*

1. *Be maintained and repaired according to manufacturers' specifications; and*
2. *Be constructed with an adjustable output rate device to permit repeated adjustments without loss of output rate accuracy and adjusted by an automatic chemical monitoring and control system that regulates, at a minimum, pH and disinfectant; and*
3. *Meet the applicable requirements established by the NSF/ANSI 50-2012 performance standard effective September 2012.*

3133B.2 Piping. *Piping used for the chemical feeder and its auxiliary equipment shall be resistant to corrosion or chemical deterioration.*

3133B.3 Installation. *Chemical feeders and associated components shall be constructed and installed to prevent uncontrolled discharge or siphoning of chemicals and fumes directly into the pool, its recirculation system, the pool area or ancillary facilities.*

SECTION 3134B
DISINFECTANT FEEDERS

Disinfectant feeders shall comply with applicable requirements established by the NSF/ANSI 50-2010 performance standard effective August 2010 for disinfectant feeders. In addition to the requirements for chemical feeders as indicated in Section 3133B, the following apply to disinfectant feeders.

3134B.1 Minimum capacity. *All feeders shall be capable of supplying not less than the equivalent of 3 pounds (1 kg) of 100 percent available chlorine per day per 10,000 gallons (37,850 L) of pool water capacity.*

3134B.2 Rate of flow adjustment. *A visible means of determining the rate of flow through the device shall be provided for each disinfectant feeder.*

3134B.3 Compressed chlorine gas disinfectant equipment. *Chlorine gas shall not be dispensed directly into the water of a pool except as an aqueous solution through the return line of the recirculation system.*

3134B.3.1 Compressed gas containers. *Each container or cylinder shall be secured to prevent accidental movement. A valve protection cap shall be provided to cover the discharge valve at all times when the cylinder is not connected to the dispensing system.*

3134B.3.2 Container scale. *Compressed gas chlorine containers in use shall be on a scale in the gas chlorinator room.*

3134B.3.3 Chlorine feeding device. *The chlorine feeding device shall be capable of delivering chlorine in an aqueous solution at the maximum design rate. The device shall not allow the backflow of pool water into the chlorine container. The device shall not allow the release of chlorine gas to the atmosphere under normal operating conditions. The device shall be designed and installed to conduct chlorine gas leaks to the outdoors during a release of chlorine gas or an interruption of the water supply.*

3134B.3.4 Piping. *Piping carrying chlorine gas under pressure shall not be located outside the gas chlorination equipment room.*

SECTION 3135B
GAS CHLORINATION EQUIPMENT ROOM

Compressed chlorine gas storage containers and auxiliary components shall be installed indoors in a separate room of not less than 1-hour fire resistant construction and shall comply with the California Fire Code and all of the following.

3135B.1 Location. *The gas chlorination equipment room shall not be located in any habitable building, above the first floor or below ground level.*

3135B.2. Exit. *Required exit doors shall swing in the direction of exit of travel and shall not open directly toward the pool or pool deck.*

3135B.3 Ventilation. *Mechanical exhaust ventilation systems shall be in compliance with the California Mechanical Code.*

3135B.4 Alarm. *An audible and visible chlorine detection alarm system shall be located in the room containing the gas chlorine equipment. The sensor shall be located within 6 inches (152 mm) of the floor level. The system shall continually monitor the room and shall activate when chlorine concentrations in the room exceed a Permissible Exposure Limit of 0.5 ppm. Activation of the alarm shall shut off the chlorine at the source and turn on the lights and ventilation system. The alarm system shall consist of the following:*

1. *An audible alarm capable of producing a sound level of at least 90 decibels; and*
2. *A visible alarm consisting of a strobe light which is mounted directly over the entrance to the chlorine equipment room. The light shall be visible during daylight hours.*

3135B.5 Illumination. *Artificial illumination of at least 50 footcandles as measured 30 inches (750 mm) from the floor shall be provided in the room.*

3135B.6 Switches. *Switches for the control of mechanical ventilation and lighting fixtures shall be located adjacent to the entry door outside the room.*

3135B.7 Equipment interlocks. *The gas chlorine feeding device shall be interlocked with the pool recirculating pump so that the gas chlorine feeding device shall not operate when the recirculating pump is off or during the filter backwash.*

3135B.8 Storage. *The gas chlorine room shall not be used for the storage of items not related to the use of the gas chlorine equipment.*

SECTION 3136B
POOL SKIMMING SYSTEMS

The pool shall be equipped with one or more skimming methods to provide continuous skimming of the pool water and shall be capable of continually withdrawing not less than 100 percent of the flow rate. <

3136B.1 Surface skimmers. *Each surface skimmer shall comply with the following provisions:*

1. *The skimmer shall be recessed into the pool wall; and*
2. *The skimmer shall be individually adjustable for the rate of flow with either an external or internal device; and*
3. *If used, a skimmer equalizer suction outlet shall be connected to at least two suction grate assemblies that meet the ANSI/APSP-16 2011 performance standard and are located at least 3 feet (915 mm) apart in any dimension between the suction outlets; and*
4. *The skimmer weir shall automatically adjust to variations in the pool water level over a range of not less than 4 inches (102 mm); and*
5. *Each skimmer shall be provided with a removable and cleanable screen or basket to trap objects. The screen or basket shall be accessible through an opening in the deck above the skimmer; and*
6. *There shall be a minimum of one skimmer for every 500 square feet or less of pool water surface area or an adequate number to meet 100 percent of pump flow at the manufacturer's maximum flow rating, whichever is greater; and*
7. *Each skimmer shall be located in relation to pool inlets to aid recirculation and surface skimming; and*
8. *All surface skimmers shall comply with applicable requirements established by the NSF/ANSI 50-2012 performance standard effective September 2012.*

3136B.2 Perimeter overflow systems. *A perimeter overflow system shall be required in pools whose water surface area equals or exceeds 5,000 square feet (464.52 m^2). Perimeter overflow systems shall be designed by an engineer or architect who has experience working on public pools and shall comply with the following provisions:*

1. ***Location.*** *The overflow system shall be integrated with the pool structure and extend completely around the pool parallel to the pool deck except where an entry or exit may require interruption; and*

2. **Channel detail.** *The overflow channel shall be not less than 3 inches (76 mm) deep, the section shall not diverge with depth of the channel, and the width of the bottom shall be not less than 3 inches (76 mm). The opening beneath the coping into the overflow system shall be a minimum of 4 inches (102 mm) beneath the coping in any direction measured radially from the inner edge of the overflow channel lip; and*
3. **Channel lip.** *The overflow channel lip shall be not more than 12 inches (305 mm) below the level of the coping or deck. The lip edge shall be rounded and shall be not thicker than $2^1/_2$ inches (64 mm) or thinner than 1 inch (25 mm) for the top 2 inches (51 mm); and*
4. **Channel covering.** *Covered overflow channels shall be permitted provided the openings do not exceed $^1/_2$ inch in the smaller dimension; and*
5. **Channel outlets.** *Channel outlet spacing and channel bottom slope shall be hydraulically designed by an engineer or architect who has experience working on public pools; and*
6. **Channel outlet covers.** *Overflow channel outlet covers shall be accessible for cleaning and maintenance. Openings of the channel outlet covers shall not pass a $^1/_2$ inch (13 mm) sphere in the smaller dimension; and*
7. **Channel drain piping.** *Channel drain piping shall provide drainage of the overflow system, carry overflow water to a surge basin and return to skimming within 10 minutes after being flooded by a sudden displacement of the pool water by pool users; and*
8. **Surge storage capacity.** *A perimeter overflow system shall be provided with a minimum surge storage capacity of not less than 1 gallon per square foot (40.75 L/m^2) of pool water surface area. Surge storage shall be permitted in the surge basin, perimeter overflow channel and in the channel drain piping returning to the surge basin.*

SECTION 3137B
POOL FITTINGS

3137B.1 Outlets. *Each pool shall be provided with a main drain submerged suction outlet typically located at the bottom of a pool that conducts water to a recirculating pump. Suction outlets shall comply with all of the following provisions:*

1. *Each pump on a pool system shall be connected to at least two suction outlets. The suction outlets shall be hydraulically balanced and symmetrically plumbed through one or more "T" fittings and shall be separated by a distance of at least 3 feet (915 mm) in any dimension between the suction outlets; and*
2. *All suction outlets shall be equipped with suction fittings that meet the ANSI/APSP-16 2011 performance standard; and*
3. *The velocity of the suction piping installed between the suction outlets shall not exceed 3 feet per second (.91 mps) under normal operation, or 6 feet per second (1.82 mps) if one outlet is blocked; and*
4. **Hydrostatic relief devices.** *In areas with a high groundwater table, or as required by local plumbing codes, a hydrostatic relief device shall be installed. When used in conjunction with a safety vacuum release system, the hydrostatic relief device must meet the manufacturer's installation requirements for the safety vacuum release system.*

   Exception: *Alternative outlet locations that have been designed by a licensed engineer who has experience working on public pools may be used if approved by the enforcing agent.*

3137B.2 Inlet fittings. *Each pool shall be provided with not less than two recirculation system inlets for the first 10,000 gallon (37,850 L) capacity and one additional inlet for each additional 10,000 gallon (37,850 L) or less capacity.*

3137B.2.1 Construction. *Inlet fittings shall not protrude greater than $1^1/_4$ inches (32 mm) into the pool and shall be shaped, rounded and smooth.*

3137B.2.2 Location. *Inlet fittings shall be located no less than 18 inches (457 mm) below the waterline, except for a spa pool or wading pool. Inlet fittings shall be separated by at least 10 feet (3048 mm) and shall be located so as to ensure uniform circulation.*

3137B.2.3 Adjustment. *Provisions shall be made for adjusting the volume of flow through each inlet. Wall inlets shall be capable of adjusting the direction of flow and to produce sufficient velocity to impart a substantial circulatory movement to the pool water.*

3137B.2.4 Floor inlets. *Pools that are greater than 40 feet (12,192 mm) in width or 3,000 square feet (278.7 mm^2) in surface area shall have floor-mounted return inlets. The number of floor inlets shall be in compliance with Section 3137B.2. All floor inlet fittings shall be located to provide uniform circulation and shall be installed so as to be flush with the surface of the pool bottom.*

SECTION 3138B
SPA POOL SPECIAL REQUIREMENTS

3138B.1 Aeration system. *A spa pool aeration and/or jet system shall be completely separate from the recirculation system and shall not be interconnected with any other pool.*

3138B.2 Maximum operating temperature. *The allowable water temperature of a spa pool shall not exceed 104° F (40° C).*

3138B.3 Surface area. *The water surface area of a spa pool shall not exceed 250 square feet (23.23 m^2).*

3138B.4 Maximum depth. *The water depth in a spa pool shall not exceed 4 feet (1220 mm).*

3138B.5 Emergency shut off switch. *A clearly labeled emergency shut off switch for the control of both the recirculation system and the aeration and/or jet system shall be installed adjacent to the spa pool.*

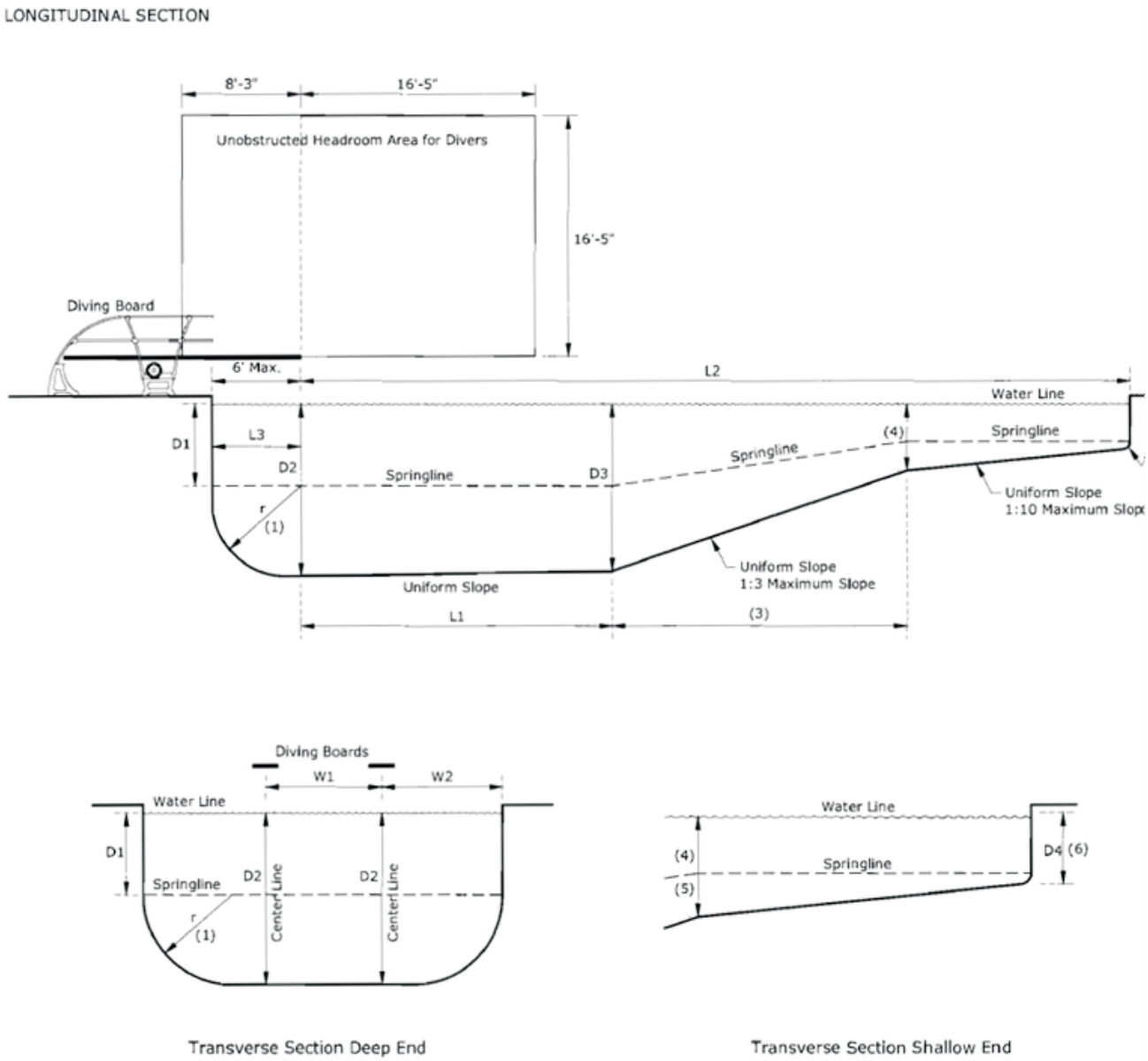


FIGURE 31B-1
DEPTHS AND CLEARANCES FOR POOLS WITH DIVING BOARDS GREATER THAN 30 INCHES (762 mm) ABOVE THE WATER LINE

TABLE 31B-1

	DEPTH OF WATER					LENGTH OF SECTION				
BOARDS AND PLATFORMS	DIM	D1	D2	D3	D4	L1	L2	L3	W1	W2
1-meter board	Min.	5'-6"	11'-6"	11'-2"	0'-0"	16'-5"	29'-7"	5'-11"	7'-11"	8'-3"
3-meter board	Min.	6'-6"	12'-6"	12'-2"	0'-0"	19'-9"	33'-8"	5'-11"	8'-7"	11'-6"

Notes for Figure 31B-1 and Table 31B-1:

1. *Maximum radius shall equal D2 minus D1 dimensions.*
2. *Radius at the shallow end shall not be more than 12 inches.*
3. *The length of a section is based on the maximum slope and other maximum and minimum dimensions.*
4. *Where there is a break in slope, the break shall be located at a water depth equal to 4'-6".*
5. *The springline depth at (4) shall not be more than 4'-0".*
6. *The maximum water depth shall be 3'-6".*
7. *Each pool shall be provided with a main drain submerged suction outlet typically located at the bottom of the pool that conducts water to a recirculating pump.*

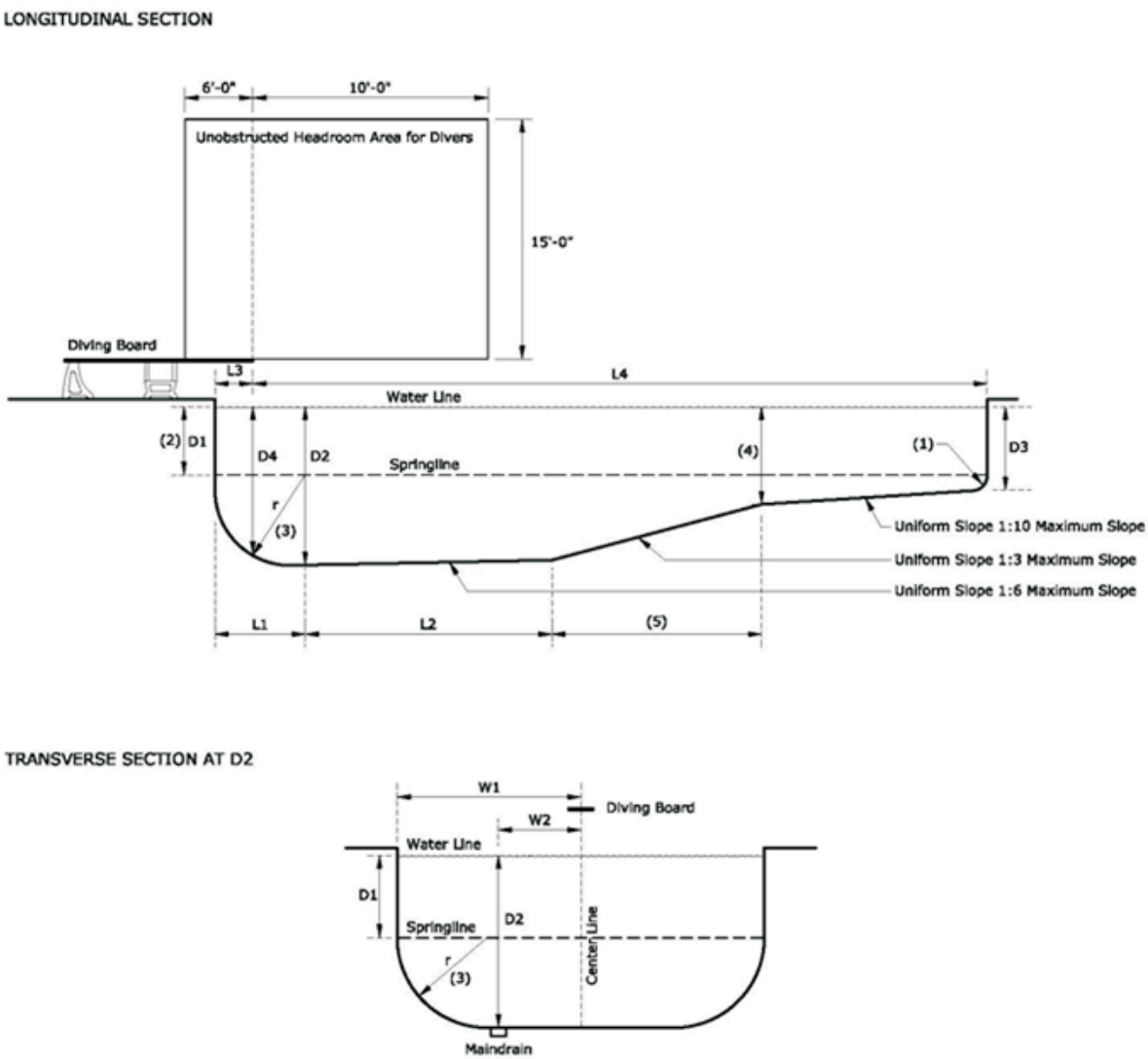


FIGURE 31B-2
DEPTHS AND CLEARANCES FOR POOLS WITH DIVING BOARDS 30 INCHES (762 MM) OR LESS ABOVE THE WATER LINE

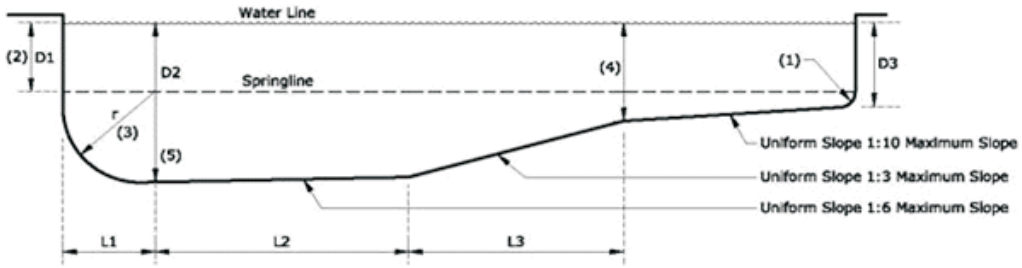
TABLE 31B-2

	DEPTH OF WATER				LENGTH OF SECTION					
DIMENSION	D1	D2	D3	D4	L1	L2	L3	L4	W1	W2
Minimum	*2'-6"*	*8'-6"*	*0'-0"*	*7'-0"*	*6'-0"*	*6'-0"*	*2'-6"*	*30'-0"*	*9'-0"*	*3'-0"*
Maximum	—	—	*3'-6"*	—	*10'-0"*	—	*4'-0"*	—	—	—

Notes for Figure 31B-2 and Table 31B-2:

1. *Radius at the shallow end shall be a maximum of 1'-0".*
2. *Springline D1 shall extend to the break in slope between the shallow area and the deep area.*
3. *Maximum radius shall equal D2 minus D1 dimensions.*
4. *Where there is a break in slope, the break shall be located at a water depth equal to 4'-6".*
5. *Length of section is based on maximum slope and other maximum or minimum dimensions.*
6. *Each pool shall be provided with a main drain submerged suction outlet typically located at the bottom of the pool that conducts water to a recirculating pump.*

LONGITUDINAL SECTION



TRANSVERSE SECTION AT D2

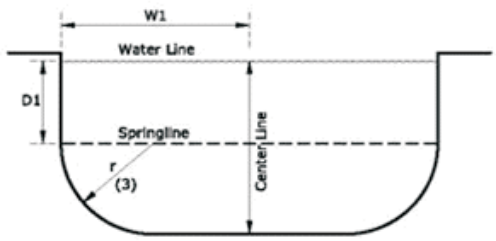


FIGURE 31B-3
DEPTHS AND CLEARANCES FOR POOLS WITHOUT DIVING BOARDS

TABLE 31B-3A
POOLS WITH MAXIMUM WATER DEPTH ≤ 6 0

	DEPTH OF WATER			LENGTH OF SECTION			
DIMENSION	D1	D2	D3	L1	L2	L3	W1
Minimum	*2'-6"*	*—*	*0'-0"*	*3'-6"*	*3'-0"*	*3'-0"*	*6'-0"*
Maximum	*—*	*6'-0"*	*3'-6"*	*—*	*—*	*—*	*—*

TABLE 31B-3B
POOLS WITH MAXIMUM WATER DEPTH > 6 0

	DEPTH OF WATER			LENGTH OF SECTION		
DIMENSION	D1	D2	D3	L1	L2	W1
Minimum	*2'-6"*	*> 6'-0"*	*0'-0"*	*3'-6"*	*3'-0"*	*7'-6"*
Maximum	*—*	*—*	*3'-6"*	*—*	*—*	*—*

Notes for Figure 31B-3 and Tables 31B-3a and 31B-3b.

1. *Radius at the shallow end shall be a maximum of 1'-0".*
2. *Springline D1 shall extend to the break in slope between the shallow area and deep area.*
3. *Maximum radius shall equal D2 minus D1 dimensions.*
4. *Where there is a break in slope, the break shall be located at a water depth equal to 4'-6".*
5. *Each pool shall be provided with a main drain submerged suction outlet typically located at the bottom of the pool that conducts water to a recirculating pump.*

of environmental health may verify the accuracy of the information filed on or with the form.

11. To the extent that the requirements for public wading pools imposed by Section 116064 conflict with this section, the requirements of this section shall prevail.

12. The department shall have no authority to take any enforcement action against any person for violation of this section and has no responsibility to administer or enforce the provisions of this section.

Authority: Health and Safety Code Section 116064 (e) Reference: Health and Safety Code Section 116064.2 AB 2114, (Statutes 2012, c. 679).

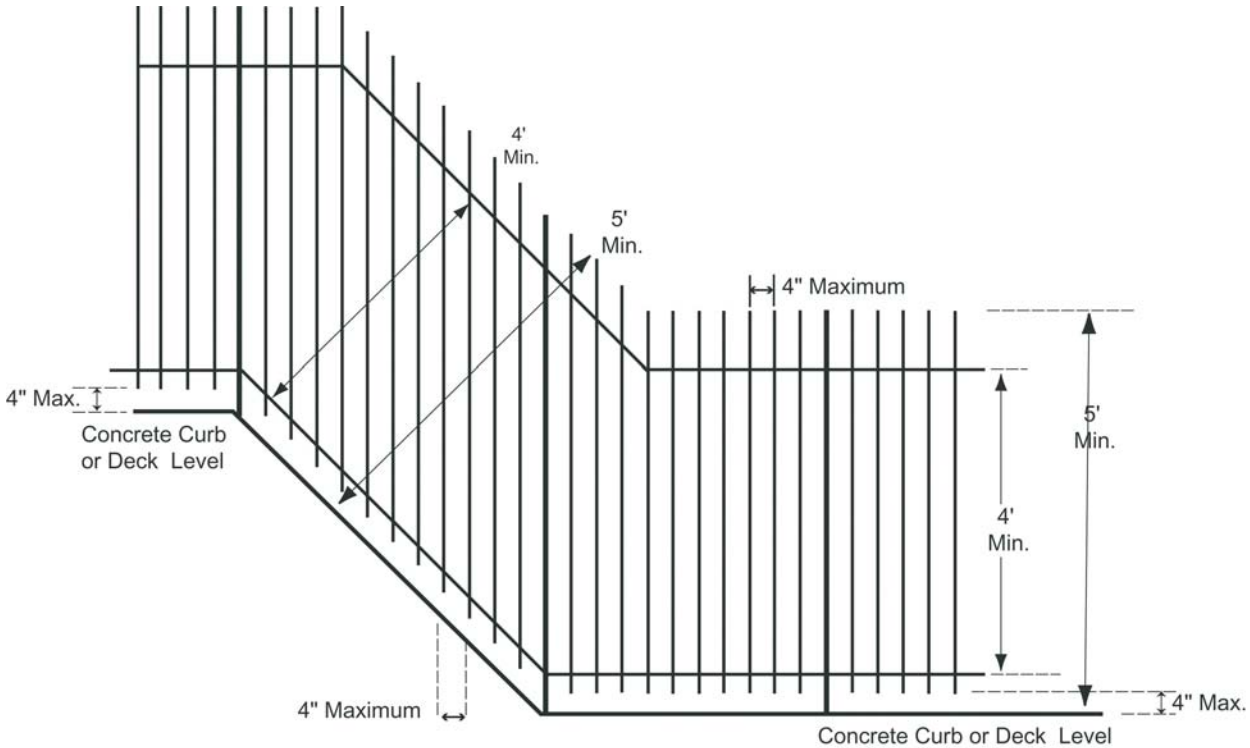


FIGURE 31B-4
PERPENDICULAR FENCING DIMENSIONS ON SLOPING GROUND

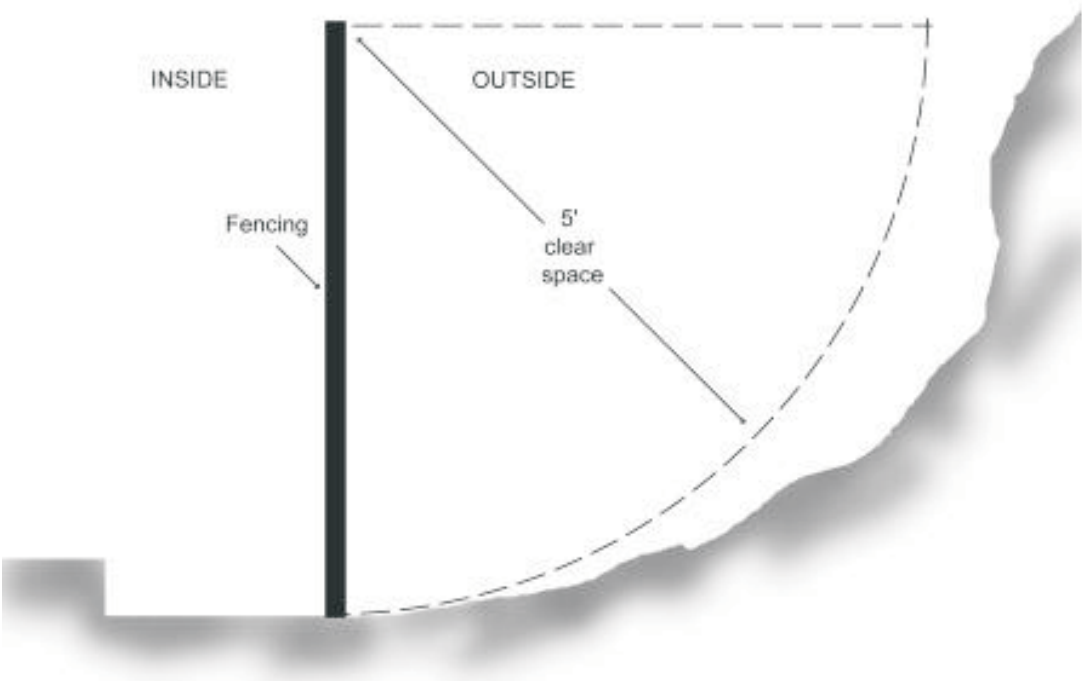
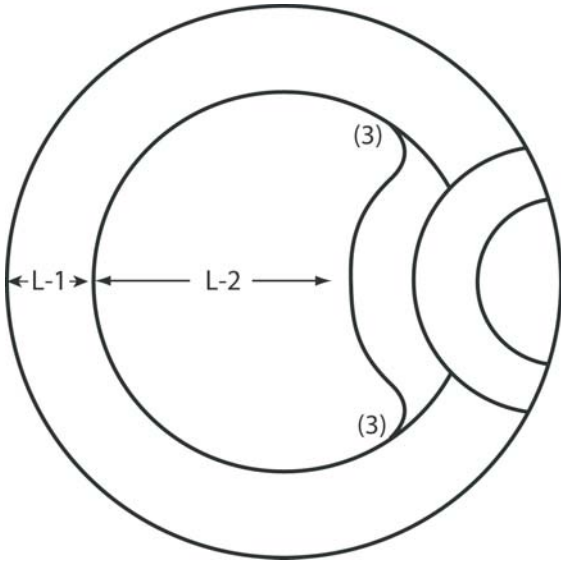


FIGURE 31B-5
EFFECTIVE FENCING HEIGHT

TOP VIEW



TRANSVERSE SECTION

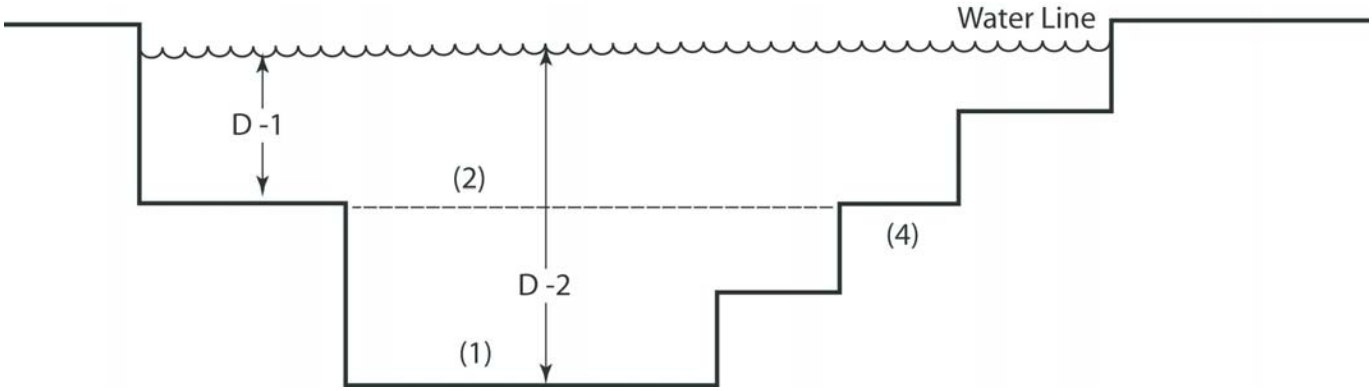


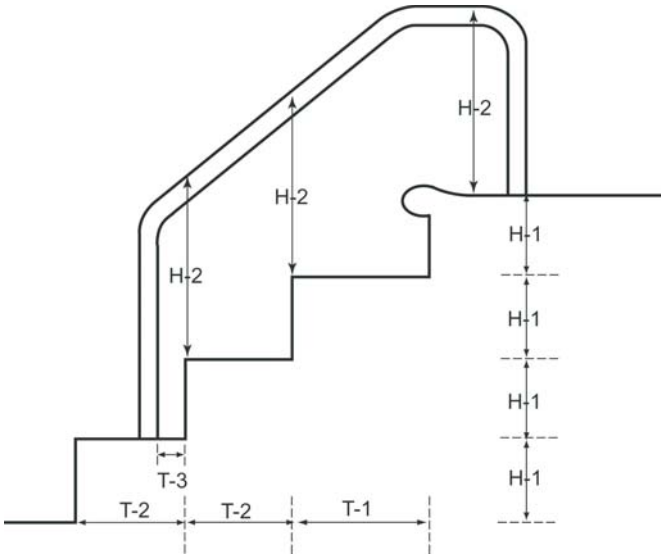
FIGURE 31B-6
DEPTHS AND DIMENSIONS FOR SPA POOLS

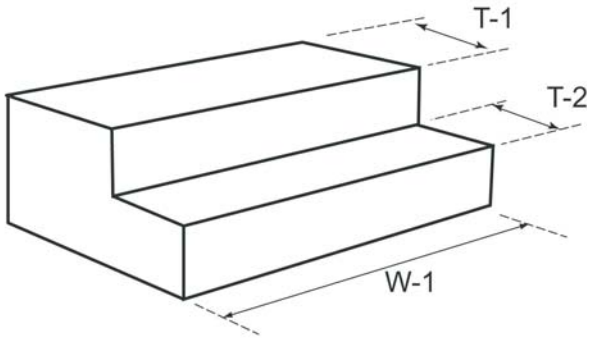
TABLE 31B-6

	DEPTH OF WATER		LENGTH OF SECTIONS	
Dimension	D1	D2	L1	L2
Minimum	—	24"	12"	24"
Maximum	24"	48"	24"	—

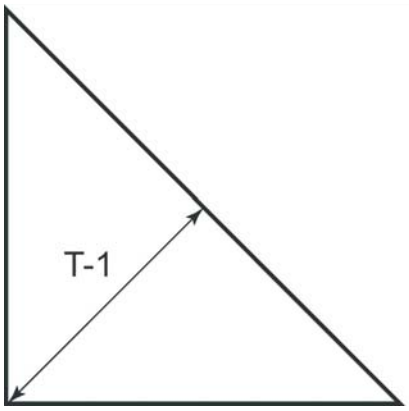
Notes for Figure 31B-6 and Table 31B-6:

1. *Bottom slope shall not exceed 1:10 and must be uniform.*
2. *Bench ramping shall not exceed 1:10 uniform slope, measured at the inner circumference of the bench.*
3. *Six inch minimum radius at "pinch points."*
4. *See Section 3111B for step and handrail dimensions.*

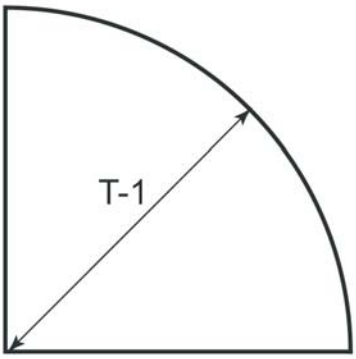




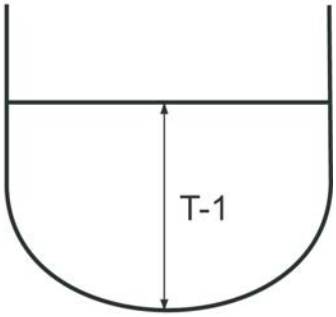
Standard Step



Triangular Step



Convex Step



Concave Step

FIGURE 31B-7
STAIR AND HANDRAIL DIMENSIONS

TABLE 31B-7

DIMENSIONS	T-1_STANDARD	T-1 TRIANGULAR, CONCAVE, CONVEX	T-2	T-3	W-1	H-1	H-2
Minimum	*14"*	*21"*	*12"*	*3"*	*24"*	*6"*	*28"*
Maximum	*18"*	*24"*	*16"*	—-	—-	*12"*	*36"*

Note for Table 31B-7:
1. Six-inch minimum radius at "pinch points".

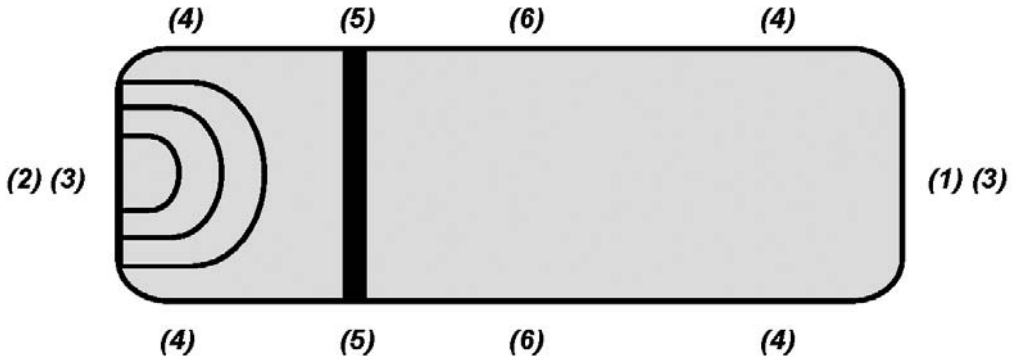


FIGURE 31B-8
DEPTH MARKER LOCATIONS

Notes:
1. Maximum depth.
2. Minimum depth.
3. Each end of pool.
4. Both sides at the shallowest and deepest parts of pool.
5. At the break in the bottom slope between the shallow and deep end.
6. Along the perimeter of the pool at distances not to exceed 25 feet.

3406*A*.3 Construction. The fire escape shall be designed to support a live load of 100 pounds per square foot (4788 Pa) and shall be constructed of steel or other approved noncombustible materials. Fire escapes constructed of wood not less than nominal 2 inches (51 mm) thick are permitted on buildings of Type V construction. Walkways and railings located over or supported by combustible roofs in buildings of Type III and IV construction are permitted to be of wood not less than nominal 2 inches (51 mm) thick.

3406*A*.4 Dimensions. Stairs shall be at least 22 inches (559 mm) wide with risers not more than, and treads not less than, 8 inches (203 mm) and landings at the foot of stairs not less than 40 inches (1016 mm) wide by 36 inches (914 mm) long, located not more than 8 inches (203 mm) below the door.

3406*A*.5 Opening protectives. Doors and windows along the fire escape shall be protected with $^3/_4$-hour opening protectives.

SECTION 3407A
GLASS REPLACEMENT

3407*A*.1 Conformance. The installation or replacement of glass shall be as required for new installations.

SECTION 3408*A*
CHANGE OF OCCUPANCY

3408*A*.1 Conformance. No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the building official, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

3408*A*.2 Certificate of occupancy. A certificate of occupancy shall be issued where it has been determined that the requirements for the new occupancy classification have been met.

3408*A*.3 Stairways. An existing stairway shall not be required to comply with the requirements of Section 1009 where the existing space and construction does not allow a reduction in pitch or slope.

3408*A*.4 Seismic. When a change of occupancy results in a structure being reclassified to a higher risk category, the structure shall conform to the seismic requirements for a new structure of the higher risk category.

Exception: Specific seismic detailing requirements of Section 1613*A* for a new structure shall not be required to be met where the seismic performance is shown to be equivalent to that of a new structure. A demonstration of equivalence shall consider the regularity, overstrength, redundancy and ductility of the structure.

SECTION 3409*A*
HISTORIC BUILDINGS

3409*A*.1 Historic buildings. The provisions of this code relating to the construction, repair, alteration, addition, restoration and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.

3409*A*.2 Flood hazard areas. Within flood hazard areas established in accordance with Section 1612*A*.3, where the work proposed constitutes substantial improvement as defined in Section 1612*A*.2, the building shall be brought into compliance with Section 1612*A*.

Exception: Historic buildings that are:

1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places;
2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or
3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

SECTION 3410*A*
MOVED STRUCTURES

3410*A*.1 Conformance. Structures moved into or within the jurisdiction shall comply with the provisions of this code for new structures.

SECTION 3411A
ADDITIONS, ALTERATIONS, REPAIRS AND SEISMIC RETROFIT TO EXISTING BUILDINGS OR STRUCTURES DESIGNED IN ACCORDANCE WITH PRE-1973 BUILDING CODE

3411A.1 General. *Provisions of this section shall apply to hospital buildings which were originally designed to pre-1973 building code and not designated as SPC 3 or higher in accordance with Chapter 6 of the California Administrative Code.*

3411A.1.1 Incidental and minor structural alterations, additions or repairs. *Incidental and minor structural additions shall be permitted provided the additions meet this code for new construction using importance factor, Ie, equal to or greater than 1.0. Alterations or repairs to the existing affected lateral load-resisting systems shall be made to conform to the requirements of Sections 3404A or 3405A respectively using importance factor, Ie, equal to or greater than 1.0.*

3411A.1.1.1 Nonstructural components. *Component importance factor, I_p, shall be permitted to be 1.0.*

Exception: *Components required for life-safety purposes after an earthquake, including emergency and standby power systems, fire protection sprinkler systems, fire alarm control panels, and egress stairways shall have a component importance factor (I_p) of 1.5.*

3411A.1.2 Major structural alteration, additions or repairs. *Major structural alterations, additions or repairs shall be in accordance with Section 3403A, 3404A or 3405A respectively.*

SECTION 3412*A*
COMPLIANCE ALTERNATIVES *FOR ADDITIONS, ALTERATIONS, REPAIRS AND SEISMIC RETROFIT TO EXISTING STRUCTURES*

3412A.1 Adoption of ASCE 41. *Except for the modifications as set forth in Sections 3412A and 3413A all additions, alterations, repairs and seismic retrofit to existing structures or portions thereof shall be permitted to be designed in accordance with the provisions of ASCE 41. For load combinations which do not include seismic forces, the new building code provisions of this code shall be applicable.*

3412A.1.1 ASCE 41 Section 1.4 – Rehabilitation Objectives. *Target building performance level shall be as follows:*

a. For general acute care hospitals along with all structures required for their continuous operation or access/egress – *Immediate Occupancy (IO) Structural Performance Level (S-1) as defined in Section 1.5.1.1 at Basic Safety Earthquake 1 (BSE-1) Seismic Hazard Level as defined in Section 1.6.1.2 and Collapse Prevention (CP) Structural performance level (S-5) per Section 1.5.1.5 at Basic Safety Earthquake 2 (BSE-2) Seismic Hazard Level as defined in Section 1.6.1.1. The nonstructural performance level shall satisfy the requirements of this code for new hospital buildings.*

Exceptions: *Buildings satisfying requirements of Sections 3411A or 3412A.2.*

b. For pre-1973 buildings which will not be used for general acute care services after January 1, 2030 – *Basic Safety Objective (BSO) Level as defined in Section 1.4.1. BSO level includes Life Safety Building Performance (3-C) Level as defined in Section 1.5.3.3 at the Basic Safety Earthquake 1 (BSE-1) Seismic Hazard Level as defined in section 1.6.1.2 and Collapse Prevention (CP) building performance level (5-E) per Section 1.5.3.4 at the Basic Safety Earthquake 2 (BSE-2) Seismic Hazard Level as defined in Section 1.6.1.1.*

Exceptions: *Buildings satisfying requirements of Sections 3411A or 3412A.2.*

c. All others – *Immediate Occupancy (IO) Building Performance Level of (1-B) as defined in Section 1.5.3.2 at Basic Safety Earthquake 1 (BSE-1) Seismic Hazard Level as defined in Section 1.6.1.2 and Collapse Prevention (CP) building performance level (5-E) per Section 1.5.3.4 at Basic Safety Earthquake 2 (BSE-2) Seismic Hazard Level as defined in Section 1.6.1.1.*

3412A.1.2 Material testing required*. Use of material properties based on historical information as default values shall not be permitted.*

3412A.1.3 Analysis procedure. *The selection of a particular analysis procedure from ASCE 41 shall be subject to the approval of the enforcement agent.*

3412A.1.4 Structural design criteria. *Prior to implementation of ASCE 41 Nonlinear Dynamic Procedure, the ground motion, analysis and design methods, material assumptions and acceptance criteria proposed by the engineer shall be reviewed by the enforcement agent.*

3412A.1.5 Structural observation, testing and inspections. *Construction, testing, inspection and structural observation requirements shall be as required for new construction.*

3412A.2 Seismic evaluation and retrofit of general acute care hospitals. *Not withstanding any other requirements of this code, existing general acute care hospitals shall comply with the seismic evaluation requirements specified in Chapter 6, of the California Administrative Code, when applicable. Seismic retrofit to comply with requirements specified in Chapter 6 of the California Administrative Code shall be permitted to be in accordance with this section. For load combinations that do not include seismic forces, the new building provisions of this code shall be applicable.*

3412A.2.1 SPC 5 and NPC 4/NPC 5. *Structures and nonstructural components and systems satisfying the requirements of this code for new buildings for Risk Category IV shall be considered to satisfy the requirements of SPC 5 and NPC 4. NPC 4 buildings satisfying operational requirements for NPC 5 of Table 11.1, Chapter 6, of the California Administrative Code, shall be placed in nonstructural performance category NPC 5.*

New general acute care hospitals and new building(s), larger than 4000 sq ft, required for general acute care services designed to requirements of this code shall be considered to satisfy the requirements of SPC 5 and NPC 5.

3412A.2.2 SPC 5 using ASCE 41. *Structures satisfying the requirements of immediate occupancy structural performance level (S-1) in accordance with Section 1.5.1.1 of ASCE 41 at BSE-1, Collapse prevention performance level S-5 in accordance with Section 1.5.1.5 of ASCE 41 at BSE-2 and items identified in Chapter 6, Article 10 of the California Administrative Code, satisfying the requirements of Immediate Occupancy Nonstructural performance level (N-B) per Section 1.5.2.2 of ASCE 41 at BSE-1 shall be considered to comply with SPC 5 requirements of Table 2.5.3, Chapter 6, of the California Administrative Code.*

3412A.2.3 SPC 2 using ASCE 41. *Structures satisfying the requirements of life safety structural performance level (S-3) per Section 1.5.1.3 of ASCE 41 at BSE-1 and items identified in Chapter 6, Article 10, of the California Administrative Code satisfying the requirements of life safety nonstructural performance level (N-C) per Section 1.5.2.3 of ASCE 41 at BSE-1, shall be considered to comply with SPC 2 requirements of Table 2.5.3, Chapter 6, of the California Administrative Code.*

3417A.1.1.2.1 New facilities or additions to existing facilities. *Means of egress for new or additions to skilled nursing facilities, intermediate care facilities, or correctional treatment centers shall only pass through conforming buildings.*

Exception: *As an alternate, skilled nursing facilities, intermediate care facilities and correctional treatment centers shall be permitted to meet the egress requirements in Sections 3417A.1.1.1.1 through 3417A.1.1.1.5 for hospital buildings.*

3417A.1.2 Jurisdiction. *Means of egress for hospitals, skilled nursing facilities and intermediate-care facilities shall only pass through buildings that are under the jurisdiction of the Office of Statewide Health Planning and Development (OSHPD).*

SECTION 3418A [OSHPD 1] REMOVAL OF HOSPITAL BUILDINGS FROM GENERAL ACUTE CARE SERVICES

3418A.1 General. *The requirements of this section shall apply when general acute care services are completely removed from SPC buildings or when buildings are removed from OSHPD jurisdiction. All buildings that remain under the OSHPD jurisdiction, after one or more SPC buildings are removed, shall satisfy the requirements of the California Building Standards Code. Approval of construction documents and a building permit are required for removal of SPC Buildings from general acute care services or removal of buildings from OSHPD jurisdiction.*

3418A.2 Definitions. *The following words and terms are applicable to this section only:*

BUILDING. *The area included within surrounding exterior walls or any combination of exterior walls and fire walls (as described in Sections 202 and 706) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above. A building may consist of one or more adjacent SPC buildings.*

GENERAL ACUTE CARE SERVICE. *Means basic and supplemental services, as defined in Section 1224.3, provided in a general acute care hospital building, as defined in Section 1224.3 and the California Administrative Code, Chapter 6, Section 1.2.*

SPC SEISMIC SEPARATION. *Means a building separation in accordance with the California Administrative Code, Chapter 6 Section 3.4.*

STRUCTURAL SEPARATION. *Means a building separation in accordance with this code.*

3418A.3 Establishing eligibility for removal from general acute care service. *In order to establish that one or more SPC buildings are eligible for removal from general acute care service, the hospital owner shall submit construction documents showing that after the SPC Buildings are removed from general acute care service:*

1. *All basic acute care services or supplemental services on the hospital's license are provided in SPC buildings satisfying the requirements for SPC-2, SPC-3, SPC-4 or SPC-5.*

   Exception: *If the hospital includes SPC-1 buildings that are not being removed from general acute care service, and these SPC-1 buildings have an approved extension to the SPC-2 deadline, basic acute care services or supplemental services on the hospital's license are permitted to remain in these SPC buildings for the duration of their extension or until these SPC-1 buildings are removed from general acute care service, whichever comes first.*

2. *All basic acute care services or supplemental services on the hospital's license are provided in SPC buildings satisfying the requirements for NPC-3, NPC-4 or NPC-5.*

   Exception: *Services shall be permitted to be located in SPC buildings satisfying the requirements of NPC-2 if the SPC buildings has approved extension to NPC-3 deadline.*

3. *The hospital complies with all egress requirements, including occupant load, number of required exits and travel distance to exits, and provides evidence that no egress from any acute care hospital building passes through the SPC buildings removed from general acute care service, SPC-1 buildings, or through buildings not under OSHPD jurisdiction.*

   Exceptions:

   1. *If the SPC building has an approved extension to the SPC-2 deadline, existing egress through the SPC-1 building shall be permitted for the duration of the extension or until the SPC-1 building is removed from general acute care service, whichever comes first.*
   2. *When permitted by Section 3417A.1.1.1.6.*

4. *No SPC building removed from general acute care service is used as a smoke compartment for any acute care hospital building. Buildings not under OSHPD jurisdiction shall not be used as a smoke compartment for any acute care hospital building.*

5. *Structural separation, fire barriers and fire walls shall satisfy the requirements of the California Building Standards Code.*

   Exception: *An SPC seismic separation in accordance with the California Administrative Code Chapter 6 Section 3.4 shall be deemed to satisfy the building structural/seismic separation requirement in this section for SPC buildings that will remain under OSHPD jurisdiction.*

6. *If the SPC building removed from general acute care service shares a common fire alarm system with the acute care hospital, the main fire alarm control panel shall be located in an acute care hospital building. The SPC building removed from general acute care service shall be in a separate zone monitored by the main fire alarm control panel. Flexible connections shall be provided for conduits/conductors crossing structural or*

SPC seismic separation joints. If the intent is to place the SPC building under local jurisdiction, the building shall satisfy Section 3418A.5.1

Exception: *Flexible connections for fire alarm conduits/conductors crossing seismic separation joints and fail safe shut-off valves, and disconnects for utilities between an SPC building removed from general acute care service and adjacent SPC-1 or SPC-2 buildings may be omitted, provided the fire alarm and utilities in the adjacent SPC-1 and SPC-2 buildings have no connection to any SPC-3, SPC-4, and SPC-5 buildings providing general acute care service.*

7. *If the SPC building removed from general acute care service shares the fire sprinkler system with the acute care hospital, an isolation valve with a tamper switch shall be provided to isolate the portion of the system serving the SPC building removed from acute care service. Flexible connections shall be provided in piping that crosses structural or SPC seismic separation joints. The fire sprinkler system shall not originate in the SPC building removed from general acute care service. If the intent is to place the building under local jurisdiction, the building shall satisfy Section 3418A.5.1.*
8. *Patient access as required by Section 1224.4.7.5 does not pass through an SPC building removed from general acute care service or through buildings that are not under the jurisdiction of OSHPD.*
9. *The primary accessible entrance to the hospital is not through an SPC building removed from general acute care service or through buildings that are not under the jurisdiction of OSHPD.*
10. *No utilities servicing acute care hospital buildings originate in or pass through, over or under, an SPC building removed from general acute care service, except as permitted by Section 3416A.1.1.1.5, or a building not under OSHPD jurisdiction.*
11. *If utilities originating in an acute care hospital building feed an SPC building removed from general acute care hospital service, fail safe shut-off valves and/or disconnects shall be provided that permit isolation of the SPC building removed from general acute care service from the hospital utilities. Flexible connections shall be provided for all utilities crossing structural or SPC seismic separation joints.*

Exception: *Flexible connections for fire alarm conduits/conductors crossing seismic separation joints and fail safe shut-off valves, and disconnects for utilities between an SPC building removed from general acute care service and adjacent SPC-1 or SPC-2 buildings may be omitted, provided the fire alarm and utilities in the adjacent SPC-1 and SPC-2 buildings have no connection to any SPC-3, SPC-4, and SPC-5 buildings providing general acute care service.*

3418A.4 Buildings intended to remain under OSHPD jurisdiction.

3418A.4.1 Qualifying nonacute care services. *In order for a building to remain under OSHPD jurisdiction that is removed from general acute care service, it shall contain one or more qualifying services. Qualifying services include:*

a. *Services considered "Outpatient Clinical Services" as defined in H&S § 129730 (a)*
   i. *Administrative space*
   ii. *Central sterile supply*
   iii. *Storage*
   iv. *Morgue and autopsy facilities*
   v. *Employee dressing rooms and lockers*
   vi. *Janitorial and housekeeping facilities*
   vii. *Laundry*
b. *Outpatient portions of the following services (with no more than 25 percent in-patient use), including but not limited to:*
   i. *Surgical*
   ii. *Chronic dialysis*
   iii. *Psychiatry*
   iv. *Rehabilitation, occupational therapy or physical therapy*
   v. *Maternity*
   vi. *Dentistry*
   vii. *Chemical dependency*
c. *Services that duplicate Basic Services, as defined in H&S §1250, or services that are provided as part of a Basic Service, but are not required for facility licensure (with no more than 25 percent in-patient use).*

All hospital support services listed in Section 3418A.4.1 Item a that are located in an SPC building at the time general acute care services are removed may remain, provided the California Department of Public Health certifies to the Office that it has received and approved a plan that demonstrates how the health facility will continue to provide all basic services in the event of any emergency when the SPC building may no longer remain functional. This certification shall be submitted by hospital to the Office prior to approval of the application to remove the SPC building from general acute care service.

3418A.4.2 Maintaining existing nonacute care services under existing license. *Existing approved nonacute care occupancies, or services, existing in the SPC building at the time it is removed from general acute care service shall be permitted to remain, and removal of the SPC building from general acute care service is not considered a change in occupancy. The enforcement agency shall be permitted to require evidence that the existing occupancies and services were in compliance at the time they were located in the SPC building. Any hospital support services located in the building removed*

from general acute care service, including administrative services, central sterile supply, storage, morgue and autopsy, employee dressing rooms and lockers, janitorial and housekeeping service, and laundry, shall be in excess of the minimum requirements for licensure and operation. Prior approval by the California Department of Public Health shall be obtained by hospital to maintain these services in the SPC building removed from acute care service.

3418A.4.3 Change of licensed services under existing license. *A change of service or function for all, or a portion, of the SPC building removed from general acute care service requires compliance with the current requirements for that service, including accessibility requirements in accordance with Chapter 11B.*

3418A.4.3.1 Skilled nursing or acute psychiatric services. *When general acute care services are removed from an SPC building which is intended to be used for skilled nursing or acute psychiatric services, and the new services will be licensed under the existing license of the general acute care hospital these new services shall comply with Section 3416A.1.1.1.5 for a nonconforming hospital building.*

3418A.4.3.2 Outpatient clinical services. *When general acute care services are removed from an SPC building that is intended to be used for outpatient clinical services under the existing acute care hospital license, the building is required to comply with the current OSHPD 3 code requirements for the new service.*

3418A.4.4 SPC buildings removed from general acute care service with new license. *When general acute care services are removed from an SPC building, and new services provided in the SPC building are issued an initial license, as determined by the California Department of Public Health, as a skilled nursing facility or acute psychiatric hospital, the SPC building shall comply with the new building code requirements or equivalent provisions of the California Building Standards code at the time of application.*

3418A.4.5 Change of building occupancy or division. *When an SPC building is removed from general acute care service with or without change of license, the new occupancy group and division of the building, and/or new service or function, shall be established. A new certificate of occupancy shall be required for the building removed from general acute care service.*

3418A.5 Change in jurisdiction for buildings removed from general acute care service. *Except as provided by Section 3418A.5.3, at the hospital's discretion, a building removed from general acute care service shall be permitted to be placed under the jurisdiction of the local enforcement agency. To be eligible for a change in jurisdiction, the building removed from general acute care service shall satisfy the requirements of Section 3418A.5.1.*

3418A.5.1 Eligibility for change in jurisdiction. *For a building removed from general acute care service to be eligible for a change in jurisdiction to the local enforcing agency, all the following criteria shall be satisfied:*

a. The building removed from general acute care service shall be freestanding, as defined in the California Administrative Code, Section 7-111.

b. Any hospital support services located in the building removed from general acute care service, including administrative services, central sterile supply, storage, morgue and autopsy, employee dressing rooms and lockers, janitorial and housekeeping service, and laundry, shall be in excess of the minimum requirements for licensure and operation. Prior approval by the California Department of Public Health shall be obtained by hospital to locate these services in the building removed from general acute care service.

c. Services/systems and utilities (e.g., power, emergency power, communication/data/nurse-call systems, space-heating systems, fire alarm system, fire-sprinkler system, medical gas and plumbing systems) shall be separate and independent from those serving any buildings under OSHPD jurisdiction.

d. If the building being transferred to the jurisdiction of the local enforcing agency is adjacent to a building under OSHPD jurisdiction and fire resistive construction separations are required, they shall be located in the building under OSHPD jurisdiction.

3418A.5.2 Modification of buildings removed from OSHPD jurisdiction. *The owner of the building shall be responsible for bringing the building into compliance with all requirements of the new authority having jurisdiction. If a building requires modification to become eligible for removal from OSHPD jurisdiction, the construction project shall be closed with compliance by OSHPD prior to the change in jurisdiction. All occupancy separation, set-back, and allowable area requirements shall be enforced.*

3418A.5.3 Buildings not eligible for change in jurisdiction. *The following freestanding buildings shall remain under OSHPD jurisdiction:*

a. Any building in which basic and/or supplementary services are provided for a general acute care hospital, acute psychiatric hospital and general acute care hospital providing only acute medical rehabilitation center services.

b. Any building that provides required patient access, egress, or smoke compartment for a building under OSHPD's jurisdiction.

c. Any building in which services under OSHPD jurisdiction are provided, including skilled nursing services, intermediate care services, acute psychiatric services, and distinct part skilled nursing or intermediate care services.

d. Any building providing central plant or utility services to a building under OSHPD jurisdiction.

e. Any building through which utilities pass through, over or under, to serve a building under OSHPD jurisdiction.

3418A.6 Vacant space. *With the removal of general acute care services, the vacated space must be reclassified with an intended occupancy as required under Section 302. If the hospital determines that the building or space in the SPC building removed from general acute care service will be vacant, the hospital shall demonstrate that unsafe conditions as described in Section 116.1 are not created.*

3418A.7 Demolition. *Demolition of SPC buildings to be removed from general acute care services shall be permitted when buildings remaining under OSHPD's jurisdiction, after demolition, satisfy the requirements of the California Building Standards Code and demolition activity does not impair the operation and/or safety of any buildings that remain under OSHPD's jurisdiction. Demolition shall be in accordance with Section 3303.*

SECTION 3419A [OSHPD 1] HOSPITAL BUILDINGS REMOVED FROM GENERAL ACUTE CARE SERVICES

3419A.1 General. *The requirements of this section shall apply to buildings removed from general acute care services that remain under OSHPD jurisdiction.*

3419A.2 Non-GAC buildings. *Non-GAC buildings shall conform to the requirements of Section 1.10.1.*

3419A.3 Freestanding buildings. *Application and enforcement of freestanding buildings removed from general acute care services but remaining under OSHPD jurisdiction shall be in accordance with Section 1.10.*

Freestanding hospital-owned clinics shall be permitted to be under the jurisdiction of OSHPD in accordance with California Administrative Code Sections 7-2104, 7-2105, and 7-2106.

CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE
CHAPTER 35 – REFERENCED STANDARDS

(Matrix Adoption Tables are non-regulatory, intended only as an aid to the user. See Chapter 1 for state agency authority and building applications.)

Adopting agency	BSC	SFM	HCD			DSA			OSHPD				BSCC	DPH	AGR	DWR	CA	SL	SLC
			1	2	1/AC	AC	SS	SS/CC	1	2	3	4							
Adopt entire chapter	X								X	X	X	X							
Adopt entire chapter as amended (amended sections listed below)		X	X	X	X		X	X											
Adopt only those sections that are listed below						X													
Chapter/Section																			
AAMA 501.4-09							*X*	*X*											
AAMA 501.6-09							*X*	*X*											
ACI							X	X											
AF & PA							*X*	*X*											
AISC							X	X											
AISI							*X*	*X*											
AITC							X	X											
ANSI						X													
ANSI-S3.4.1						*X*													
ANSI/SDI-C-2012						*X*	*X*	*X*											
ASCE/SEI							X	X											
ASME						X													
ASME A17.1/CSA B44-07		*X*				X													
ASME A17.1A/CSA B44A-08						*X*													
ASME A18.1-2008						*X*													
ASME BPE-2009		X																	
ASTM							X	X											
ASTM C 114-10							*X*	*X*											
ASTM C 1157/C 1157M-11							*X*	*X*											
ASTM C 1240-11							*X*	*X*											
ASTM C 1249-06a (2011)							*X*	*X*											
ASTM C 1260-07							*X*	*X*											
ASTM C 1293-08b							*X*	*X*											
ASTM C 1392-00 (2009)							*X*	*X*											
ASTM C 1394-03 (2008)							*X*	*X*											
ASTM C 1401-09a							*X*	*X*											
ASTM D 1586-11							*X*	*X*											
ASTM D 3441-05							*X*	*X*											
ASTM D 3966-07							*X*	*X*											
ASTM E 648-04		X																	
ASTM E 662-09		X																	
ASTM F 1292-99						*X*													
ASTM F 1292-04						*X*													
ASTM F 1487-01						*X*													
ASTM F 1951-99						*X*													
AWPA							*X*	*X*											
AWS							X	X											
BHMA						X													
BHMA A156.10-2011						*X*													
BHMA A156.19-2007						*X*													
CPSC																			
FEMA 352-00							*X*	*X*											
FM 1950-10							*X*	*X*											
FM 3260-00		X																	

(continued)

CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE
CHAPTER 35 – REFERENCED STANDARDS—continued

Adopting agency	BSC	SFM	HCD			DSA			OSHPD				BSCC	DHS	AGR	DWR	CEC	CA	SL	SLC
			1	2	1/AC	AC	SS	SS/CC	1	2	3	4								
Adopt entire chapter	**X**								**X**	**X**	**X**	**X**								
Adopt entire chapter as amended (amended sections listed below)		**X**	**X**	**X**	**X**		**X**	**X**												
Adopt only those sections that are listed below						**X**														
Chapter / Section																				
FM3011-99		X																		
FM4430-12		X																		
FM4430-80		X																		
ICC							X	X												
ICC ES AC 331		X																		
ICC ES AC 77		X																		
ISO 9001-08							*X*	*X*												
ISO 17025-05							*X*	*X*												
NFPA						X	X	X												
NFPA 11-13		*X*																		
NFPA 13-*13*		X																		
NFPA 13D-*13*		X																		
NFPA 13R-*13*		X																		
NFPA 14-*13*		X																		
NFPA 15-*12*		X																		
NFPA 17-*13*		*X*																		
NFPA 17A-*13*		*X*																		
NFPA 20-*13*		*X*																		
NFPA 22-*13*		X																		
NFPA 24-*13*		X																		
NFPA 31-11		*X*																		
NFPA 37-*10*																				
NFPA 52-13		*X*																		
NFPA 54-*12*		X																		
NFPA 61-13		X																		
NFPA 72-13		X				X														
NFPA 92-12		X																		
NFPA 99-12		X																		
NFPA 211-13		X																		
NFPA 259-13		X																		
NFPA 275-13		X																		
NFPA 285-13		X																		
NFPA 288-13		X																		
NFPA 289-13		X																		
NFPA 409-13		X																		
NFPA 502-14		X																		
NFPA 654-13		X																		
NFPA 703-13		X																		
NFPA 720-12			X	X	X															
NFPA 1124-13		X																		
NFPA 2001-12		X																		
PCI							X	X												
PTI							X	X												
SFM 12-3		X																		
SFM 12-7-3		X																		
SFM 12-7A-1		X																		

(continued)

FM

Factory Mutual Global Research
Standards Laboratories Department
1301 Atwood Avenue, P.O. Box 7500
Johnston, RI 02919

Standard reference number	Title	Referenced in code section number
FM 1950—10	*Approval Standard for Seismic Sway Braces for Automatic Sprinkler Systems*	*1705A.12.3*
3260—00	*Radiant Energy-Sensing Fire Detectors for Automatic Fire Alarm Signaling.*	
3011—99	*Approval Standard for Central Station Service for Fire Alarm and Protective Equipment Supervision*	
FM 4430—12	*Approved Standard for Smoke and Heat Vents*	*910.3.2*
4430—80	*Acceptance Criteria for Smoke and Heat Vents*	*910.3.1*
4450 (1989)	Approval Standard for Class 1 Insulated Steel Deck Roofs—with Supplements through July 1992	1508.1, 2603.3, 2603.4.1.5
4470 (1992)	Approval Standard for Class 1 Roof Covers	1504.7
4474 (04)	Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures	1504.3.1
4880 (2005)	American National Standard for Evaluating Insulated Wall or Wall and Roof/Ceiling Assemblies, Plastic Interior Finish Materials, Plastic Exterior Building Panels, Wall/Ceiling Coating Systems, Interior and Exterior Finish Systems	2603.4, 2603.9

GA

Gypsum Association
810 First Street N.E. #510
Washington, DC 20002-4268

Standard reference number	Title	Referenced in code section number
GA 216—07	Application and Finishing of Gypsum Panel Products	Table 2508.1, 2509.2
GA 600—06	Fire-resistance Design Manual, 18th Edition	Table 720.1(1), Table 720.1(2), Table 720.1(3)

HPVA

Hardwood Plywood Veneer Association
1825 Michael Faraday Drive
Reston, VA 20190

Standard reference number	Title	Referenced in code section number
HP-1—2004	Standard for Hardwood and Decorative Plywood	2303.3, 2304.6.2

HUD

U.S. Department of Housing and Urban Development
451 7th Street, SW
Washington, DC 20410

Standard reference number	Title	Referenced in code section number
HUD 24 CFR Part 3280 (1994)	Manufactured Home Construction and Safety Standards	G201

ICC

International Code Council, Inc.
500 New Jersey Ave, NW
6th Floor
Washington, DC 20001

Standard reference number	Title	Referenced in code section number
ICC 300—12	ICC Standard on Bleachers, Folding and Telescopic Seating and Grandstands	1028.1.1, Table 1607.1, 3401.1
ICC 400—12	Standard on Design and Construction of Log Structures	*2301.2*
ICC 500—08	ICC/NSSA Standard on the Design and Construction of Storm Shelters	202, 423.1, 423.2
ICC 600—08	Standard for Residential Construction in High Wind Regions	1609.1.1, 1609.1.1.1, 2308.2.1
*ICC-ES AC 01—12**	*Acceptance Criteria for Expansion Anchors in Masonry Elements*	*1616A.1.19*
*ICC-ES AC 58—12**	*Acceptance Criteria for Adhesive Anchors in Masonry Elements*	*1616A.1.19*
*ICC-ES AC 70—12**	*Acceptance Criteria for Fasteners Power-Driven into Concrete, Steel and Masonry Elements*	*908A.1.1*
ICC ES AC 77	*Acceptance Criteria for Smoke Containment Systems Used with Fire-resistance-rated Elevator Hoistway Doors and Frames*	*707.14.1*

ICC—continued

*ICC-ES AC 106—12**	*Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry*	*1616A.1.19*
*ICC-ES AC 125—12**	*Acceptance Criteria for Concrete, and Reinforced and Unreinforced Masonry Strengthening Using Externally Bonded Fiber-Reinforced Polymer (FRP) Composite Systems*	*1914.3*
ICC-ES AC 156—12	*Acceptance Criteria for Seismic Certification by Shake-Table Testing of Nonstructural Components*	*1705A.12.4*
*ICC-ES AC 178—12**	*Acceptance Criteria for Inspection and Verification of Concrete, and Reinforced and Unreinforced Masonry Strengthening Using Fiber-Reinforced Polymer (FRP) Composite Systems*	*1914A.3*
*ICC-ES AC 193—12**	*Acceptance Criteria for Mechanical Anchors in Concrete Elements*	*1616A.1.19, 1909A.11*
ICC-ES AC 308—12	*Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements*	*1616A.1.19*
ICC ES AC 331	*Acceptance Criteria for Smoke and Heat Vents*	*910.3.1*
ICC-ES AC 358—12	*Acceptance Criteria for Helical Foundation Systems and Devices*	*1810A.3.1.5.1*
SBCCI SSTD 11—97	Test Standard for Determining Wind Resistance of Concrete or Clay Roof Tiles	1716.2.1, 1716.2.2

** Refers to International Building Code, 2012 as a reference standard.*

ISO

International Organization for Standardization
ISO Central Secretariat
1 ch, de la Voie-Creuse, Case Postale 56
CH-1211 Geneva 20, Switzerland

Standard reference number	Title	Referenced in code section number
ISO 8115—86	Cotton Bales–Dimensions and Density	Table 415.8.2.1.1
ISO 9001—08	*Quality Management Systems - Requirements*	*1705A.12.4*
ISO 17025—05	*General Requirement for Competence of Testing and Calibration Laboratories*	*1705A.12.4*

NAAMM

National Association of Architectural Metal Manufacturers
800 Roosevelt Road, Bldg. C, Suite 312
Glen Ellyn, IL 60137

Standard reference number	Title	Referenced in code section number
FP 1001—07	Guide Specifications for Design of Metal Flag Poles	1609.1.1

NCMA

National Concrete Masonry Association
13750 Sunrise Valley
Herndon, VA 22071-4662

Standard reference number	Title	Referenced in code section number
TEK 5-84 (1996)	Details for Concrete Masonry Fire Walls	Table 720.1(2)

NFPA

National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471

Standard reference number	Title	Referenced in code section number
11—10	Low-, *Medium- and High*-Expansion Foam	904.7
12—05	Carbon Dioxide Extinguishing Systems	904.8, 904.11
12A—04 Halon 1301	Halon 1301 Fire Extinguishing Systems	904.9
13—*13*	Installation of Sprinkler Systems, *as amended**	708.2, 903.3.1.1, 903.3.2, 903.3.5.1.1, 903.3.5.2, 904.11, 905.3.4, 907.6.3, 1613.6.3, *1616.9.5, 1616.10.17*

NFPA 13, Amended Sections as follows:

Revise Section 2.2 and add publications as follows:

2.2 NFPA Publications.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 2013 California* edition.

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Text continues on page 634.

NFPA—continued

Delete existing A.7.6.2.4 and Figure A.7.6.2.4

Revise Section 8.15.1.2.15 as follows:

8.15.1.2.15 Exterior columns under 10 ft^2 (0.93 m^2) in total area, formed by studs or wood joist, with *no sources of ignition within the column*, supporting exterior canopies that are fully protected with a sprinkler system, shall not require sprinkler protection.

Revise Section 8.15.5.7 as follows:

8.15.5.7 *The sprinkler required at the top and bottom of the elevator hoistway by 8.15.5.6 shall not be required where permitted by Chapter 30 of the California Building Code.*

Revise Section 8.15.7.1* as follows:

8.15.7.1* Unless the requirements of 8.15.7.2 or 8.15.7.3 are met, sprinklers shall be installed under exterior roofs, canopies, porte-cochere, balconies, decks, or similar projections exceeding 4 ft (1.2 m) in width.

Revise Section 8.15.7.2 as follows:*

8.15.7.2* Sprinklers shall be permitted to be omitted where the canopies, roofs, balconies, decks, or similar projections are constructed with materials that are noncombustible, limited combustible, or fire retardant treated wood as defined in NFPA 703, *Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials.*

Delete Section A.8.15.7.2 of Annex

Revise Section 8.15.7.3

8.15.7.3 Sprinklers shall be permitted to be omitted from below the canopies, roofs, balconies, decks, or similar projections are combustible construction, provided the exposed finish material on the roof, *or* canopy is noncombustible, limited-combustible, or fire retardant treated wood as defined in NFPA 703, *Standard for Fire Retardant–Treated Wood and Fire-Retardant Coatings for Building Materials*, and the roofs, *or* canopies contain only sprinklered concealed spaces or any of the following unsprinklered combustible concealed spaces:

(1) Combustible concealed spaces filled entirely with noncombustible insulation

(2) Light or ordinary hazard occupancies where noncombustible or limited-combustible ceilings are directly attached to the bottom of solid wood joists so as to create enclosed joist spaces 160 ft^3 (4.5 m^3) or less in volume, including space below insulation that is laid directly on top or within the ceiling joists in an otherwise sprinklered attic [See 11.2.3.1.4(4)(d)].

(3) Concealed spaces over isolated small roofs, or canopies not exceeding 55 ft^2 (5.1 m^2).

Delete language to section 8.15.7.4 and reserve section number.
8.15.7.4. Reserved.

Revise Annex Section A.8.15.7.5 as follows:

A.8.15.7.5 The presence of planters, newspaper machines and *similar items*, should not be considered storage.

Add new Sections 8.15.7.6 as follows:

8.15.7.6 Sprinklers may be omitted for following structures:

(1) Solar photovoltaic panel structures with no use underneath. Signs may be provided, as determined by the enforcing agency prohibiting any use underneath, including storage.

(2) Solar photovoltaic (PV) panels supported by framing that have sufficient uniformly distributed and unobstructed openings throughout the top of the array (horizontal plane) to allow heat and gases to escape, as determined by the enforcing agency.

Add new Sections 8.16.1.1.1.4 and 8.16.1.1.1.5 as follows:

8.16.1.1.1.4 *Where a system includes floor control valves, a hydraulic design information sign containing information for the floor shall be provided at each floor control valve. A hydraulic design information sign shall be provided for each area calculated. The installing contractor shall identify a hydraulically designed sprinkler system with a permanently marked weatherproof metal or rigid plastic sign secured with corrosion resistant wire, chain, or other approved means. Such signs shall be placed at the alarm valve, dry pipe valve, preaction valve, or deluge valve supplying the corresponding hydraulically designed area.*

8.16.1.1.1.5 *Control valves, check valves, drain valves, antifreeze valves shall be readily accessible for inspection, testing, and maintenance. Valves located more than 7 feet above the finished floor shall be provided with a means of opening and closing the valve from the floor level.*

Revise Section 8.16.1.5.1 as follows:

8.16.1.5.1 Private fire service main systems shall have sectional control valves at appropriate points in order to permit sectionalizing the system in the event of a break or for the making of repairs or extensions.

Add new Sections 8.16.1.5.1.1, 8.16.1.5.1.2 and 8.16.1.5.1.3 as follows:

8.16.1.5.1.1 *Sectional control valves are not required when the fire service main system serves less than six fire appurtenances.*

8.16.1.5.1.2 *Sectional control valves shall be indicating valves in accordance with Section 6.7.1.3.*

NFPA—continued

8.16.1.5.1.3 *Sectional control valves shall be located so that no more than five fire appurtenances are affected by shut-down of any single portion of the fire service main. Each fire hydrant, fire sprinkler system riser, and standpipe riser shall be considered a separate fire appurtenance. In-rack sprinkler systems shall not be considered as a separate appurtenance.*

8.16.1.5.1.4 *The number of fire appurtenances between sectional control valves is allowed to be modified by the authority having jurisdiction.*

Revise Section 8.16.1.5.2 as follows:

8.16.1.5.2 A valve shall be provided on each bank where a main crosses a *body of* water or outside the building foundation(s) where the main or section of main runs under a building.

Add new Section 9.1.3.9.1.1 as follows:

9.1.3.9.1.1 *Powder-driven studs used for attaching hangers to the building structure are prohibited in Seismic design Categories C, D, E and F.*

Revise Section 9.3.5.8.3 as follows:

9.3.5.8.3 *Where threaded pipe is used for sway bracing, it shall have a wall thickness of not less then Schedule 40.*

Replace Section 9.3.5.9.4 as follows:

Lag screws or power-driven fasteners shall not be used to attach braces to the building structure.

Add language to the beginning of Section 9.3.5.9.6 as follows:

9.3.5.9.6 *Fastening methods other than those identified in 9.3.5.9* shall not apply to other fastening methods, which shall be acceptable for use if certified by a registered professional engineer to support the loads determined in accordance with the criteria in 9.3.5.6. Calculations shall be submitted *to* the authority having jurisdiction.

Revise Section 9.3.5.9.7.2* as follows:

9.3.5.9.7.2* Concrete anchors other than those shown in Figure 9.3.5.9.1 *and identified in 9.3.5.8.10* shall be acceptable for use where designed in accordance with the requirements of the building code and certified by a registered professional engineer.

Revise Section 9.3.6.1(3) as follows:

9.3.6.1*(3) No. 12, 440 lb (200 Kg) wire installed at least 45 degrees from the vertical plane and anchored on both sides of the pipe. Powder-driven fasteners for attaching restraint are allowed to be used provided that the restraint component does not support the dead load.*

Revise Section 10.6.5 as follows:

10.6.5 Pipe joints shall not be located under foundation footings. *The pipe under the building or building foundation shall not contain mechanical joints.*

Exceptions:

1. Where allowed in accordance with 10.6.2.

2. Alternate designs may be utilized where designed by a registered professional engineer and approved by the enforcing agency.

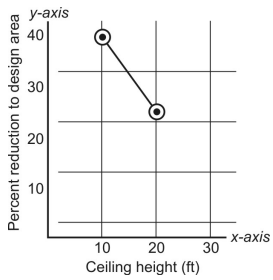
Revise Section 11.2.3.1.4(4)(i) as follows:

11.2.3.1.4(4)(i) Exterior columns under 10 ft^2 (0.93 m^2) in *total* area, formed by studs or wood joist, *with no sources of ignition within the column*, supporting exterior canopies that are fully protected with a sprinkler system.

Revise Section 11.2.3.2.3.1 as follows:

11.2.3.2.3.1 Where listed quick-response sprinklers, excluding extended coverage quick-response sprinklers, are used throughout a system or portion of a system having the same hydraulic design basis, the system area of operation shall be permitted to be reduced without revising the density as indicated in Figure 11.2.3.2.3.1 when all of the following conditions are satisfied:

(1) Wet pipe system.
(2) Light hazard occupancy.



NFPA—continued

(3) 20 ft (6.1 m) maximum ceiling height.
(4) There are no unprotected ceiling pockets as allowed by 8.6.7 and 8.8.7 exceeding 32 ft^2 (3 m^2).

Note: $y = \frac{-3x}{2} + 55$

For ceiling height ≥ 10 ft and ≤ 20 ft, $y = \frac{-3x}{2} + 55$

For ceiling height < 10 ft, y = 40

For ceiling height > 20 ft, y = 0

For SI units, 1 ft = 0.31 m.

FIGURE 11.2.3.2.3.1 Design Area Reduction for Quick-Response Sprinklers.

Revise Section 11.2.3.2.3.2 as follows:

11.2.3.2.3.2 The number of sprinklers in the design area shall never be less than *seven*.

Revise Section 12.1.1.2 as follows:

12.1.1.2 Early suppression fast-response (ESFR) sprinklers shall not be used in buildings with automatic heat or smoke vents unless the vents use a standard-response operating mechanism *with a minimum temperature rating of 360ºF (182ºC) or 100ºF (56ºC) above the operating temperature of the sprinklers, whichever is higher.*

Add Section 24.1(5)

24.1 Approval of Sprinkler Systems and Private Fire Service Mains.
The installing contractor shall do the following:

(1) Notify the authority having jurisdiction and the property owner or property owner's authorized representative of the time and date testing will be performed.

(2) Perform all required testing (see Section 24.2).

(3) Complete and sign the appropriate contractor's material and test certificate(s) (see Figure 24.1).

(4) Remove all caps and straps prior to placing the sprinkler system in service.

(5) Upon system acceptance by the authority having jurisdiction a label prescribed by California Code of Regulations, Title 19, Chapter 5 shall be affixed to each system riser.

Revise Section 24.4(2) and add Section 24.4(3) as follows:

24.4 Instructions.

The installing contractor shall provide the property owner or the property owner's authorized representative with the following:

(1) All literature and instructions provided by the manufacturer describing proper operation and maintenance of any equip- ment and devices installed

(2) NFPA 25, Standard for the Inspection, testing, and maintenance of Water-Based Fire Protection Systems, 2013 California Edition

(3) Title 19, California Code of Regulations, Chapter 5, "Fire Extinguishing Systems."

Add sentence at the end of Section 24.5.1 as follows:

24.5.1 *"Pipe schedule systems shall be provided with a sign indicating that the system was designed and installed as a pipe schedule system and the hazard classification(s) included in the design."*

Revise Section 24.5.2(3) and Add Sections 24.5.2(7) to (14) as follows:

24.5.2 The sign shall include the following information:

(3) Required flow and pressure of the system at the base of the riser.

(7) Required flow and pressure of the system at the water supply source.

(8) Required flow and pressure of the system at the discharge side of the fire pump where a fire pump is installed.

NFPA—continued

(9) Type or types and number of sprinklers or nozzles installed including the orifice size, temperature rating, orientation, K-Factor, sprinkler identification number (SIN) for sprinkler heads when applicable, and response type.

(10) The minimum discharge flow rate and pressure required from the hydraulically most demanding sprinkler.

(11) The required pressure settings for pressure reducing valves.

(12) For deluge sprinkler systems, the required flow and pressure at the hydraulically most demanding sprinkler or nozzle.

(13) The protection area per sprinkler based on the hydraulic calculations.

(14) The edition of NFPA 13 to which the system was designed and installed.

Revise Section 24.6.1 as follows:

24.6.1 *California Edition* NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.*

13D—*13* Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes *as amended**. *R313.1.1, R313.2.1, R313.3.1, R313.3.2, R313.3.2.3.1, R313.3.2.4.2, R313.3.6*

Text continues on page 638.

NFPA—continued

NFPA 13D, Amended Sectiona as follows:

6.2* Water Supply Sources. *When the requirements of Section 6.2.2 are met,* the following water supply sources shall be considered to be accept able by this standard:

(1) A connection to a reliable water works system with or with out an automatically operated pump

(2) An elevated tank

(3) A pressure tank designed to American Society of Mechanical Engineers (ASME) standards for a pressure vessel with a reliable pressure source

(4) A stored water source with an automatically operated pump

(5) A well with a pump of sufficient capacity and pres sure to meet the sprinkler system demand. The stored water requirement of 6.1.2 or 6.1.3 shall be permitted to be a combination of the water in the well (including the refill rate) plus the water in the holding tank if such tank can sup ply the sprinkler system.

6.2.2 Where a *well*, pump, tank *or combination thereof* is the source of supply for a fire sprinkler system, *the water supply shall serve both domestic and fire sprinkler systems, and* the following shall be met:

(1) A test connection shall be provided down stream of the pump that creates a flow of water equal to the smallest sprinkler on the system. The connection shall return water to the tank.

(2) Any disconnecting means for the pump shall be approved.

(3) A method for refilling the tank shall be piped to the tank.

(4) A method of seeing the water level in the tank shall be provided with out having to open the tank.

(5) The pump shall not be permitted to sit directly on the floor.

6.2.2.1 *Where a fire sprinkler system is supplied by a stored water source with an automatically operated means of pressurizing the system other than an electric pump, the water supply may serve the sprinkler system only.*

6.2.4 *Where a water supply serves both domestic and fire sprinkler systems, 5 gpm (19 L/min) shall be added to the sprinkler system demand at the point where the systems are connected, to determine the size of common piping and the size of the total water supply requirements where no provision is made to prevent flow into the domestic water system upon operation of a sprinkler.*

Add Section 6.6.8 as follows:

6.6.8 Sprinklers shall be permitted to be omitted for following structures:

(1) Solar photovoltaic panel structures with no use under neath. Signs may be provided, as deter mined by the enforcing agency prohibiting any use under neath including storage.

(2) Solar photovoltaic (PV) panels sup ported by framing that have sufficient uniformly distributed and unobstructed openings throughout the top of the array (horizontal plane) to allow heat and gases to escape, as determined by the enforcing agency.

Text continues on page 639.

NFPA—continued

NFPA 13D, Amended Sections as follows:

8.3.4* Sprinklers shall not be required in *detached* garages, open attached porches, carports *with no habitable space above,* and similar structures.

13R—*13* Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height *as amended** 903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4

NFPA 13R, Amended Sections as follows:

Revise Section 2.2 and add publications as follows:

2.2 NFPA Publications.

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 2013 California* edition.

Add Section 6.3.5 as follows:

6.3.5 Instructions.

The installing contractor shall provide the property owner or the property owner's authorized representative with the following:

(1) All literature and instructions provided by the manufacturer describing proper operation and maintenance of any equipment and devices installed

(2) NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems 2013 California Edition and Title 19, California Code of Regulations, Chapter 5.

(3) Once the system is accepted by the authority having jurisdiction a label as prescribed by Title 19, California Code of Regulations, Chapter 5, shall be affixed to each system riser.

Text continues on page 640.

NFPA—continued

14—*13* Installation of Standpipe and Hose System, *as amended** 905.2, 905.3.4, 905.4.2, 905.6.2, 905.8

NFPA 14, Amended Sections as follows: Replace Section 6.3.7.1

6.3.7.1 *System water supply valves, isolation control valves, and other valves in fire mains shall be supervised in an approved manner in the open position by one of the following methods:*

(1) Where a building has a fire alarm system or a sprinkler monitoring system installed, the valve shall be supervised by:
(a) a central station, proprietary, or remote supervising station, or
(b) a local signaling service that initiates an audible signal at a constantly attended location.

(2) Where a building does not have a fire alarm system or a sprinkler monitoring system installed, the valve shall be supervised by:
(a) Locking the valves in the open position, or
(b) Sealing of valves and a approved weekly recorded inspection where valves are located within fenced enclosures under the control of the owner.

15—12 *Water Spray Fixed Systems for Fire Protection*
16—07 Installation of Foam-water Sprinkler and Foam-water Spray Systems 904.7, 904.11
17—*13* Dry Chemical Extinguishing Systems 904.6, 904.11
17A—*13* Wet Chemical Extinguishing Systems 904.5, 904.11
20—*13* Installation of Stationary Pumps for Fire Protection 913.1, 913.2.1, 913.5
22—13 *Water Tanks for Private Fire Protection*
24—13 *Installation of Private Fire Service Mains and Their Appurtenances, as amended**

NFPA 24, Amended Sections as follows: Amend Section 4.2.1

Section 4.2.1. Installation work shall be done by fully experienced and responsible *contractors. Contractors shall be appropriately licensed in the State of California to install private fire service mains and their appurtenances.*

Revise Section 4.2.2 as follows:

4.2.2 *Installation or modification of private fire service mains shall not begin until plans are approved and appropriate permits secured from* the authority having jurisdiction.

Add Section 4.2.2.1 as follows:

4.2.2.1 *As approved by the authority having jurisdiction, emergency repair of existing system may start immediately, with plans being submitted to the authority having jurisdiction within 96 hours from the start of the repair work.*

Revise Section 5.9.1.2 as follows:

Section 5.9.1.2 Fire department connections shall be properly supported *and protected from mechanical damage.*

Revise Section 5.9.5.1 as follows:

5.9.5.1 Fire department connections shall be on the street side of buildings and *as approved by the authority having jurisdiction.*

Revise Section 6.5.1 as follows:

6.5.1 *Private* fire service main systems shall have sectional control valves at appropriate points in order to permit sectionalizing the system in the event of a break or for the making of repairs or extensions.

Add Sections 6.5.2.1 – 6.5.2.3

6.5.2.1 *Sectional control valves are not required when the fire service main system serves less than six fire appurtenances.*

6.5.2.2 *Sectional control valves shall be indicating valves in accordance with Section 6.7.1.3.*

6.5.2.3 *Sectional control valves shall be located so that no more than five fire appurtenances are affected by shut-down of any single portion of the fire service main. Each fire hydrant, fire sprinkler system riser, and standpipe riser shall be considered a separate fire appurtenance. In-rack sprinkler systems shall not be considered as a separate appurtenance.*

6.5.2.4 *The number of fire appurtenances between sectional control valves is allowed to be modified by the authority having jurisdiction.*

NFPA—continued

111—*13*	Stored Electrical Energy Emergency and Standby Power Systems	2702.1
120—10	*Fire Prevention and Control in Coal Mines*	*415.6.1*
170—09	*Standard for Fire Safety and Emergency Symbols*	*907.1.2*
211—*13*	Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances	2112.5
252—03	Standard Methods of Fire Tests of Door Assemblies	715.3, 715.4.1, 715.4.2, 715.4.3, 715.4.7.3.1
253—06	Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source	402.12.1, 406.6.4, 804.2, 804.3
257—07	Standard for Fire Test for Window and Glass Block Assemblies	715.3, 715.4.3.2, 715.5, 715.5.1, 715.5.2, 715.5.9.1
259—*13*	Test Method for Potential Heat of Building Materials	2603.4.1.10, 2603.5.3
265—07	Method of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings on Full Height Panels and Walls	803.1.3, 803.1.3.1
268—07	Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source	1406.2.1, 1406.2.1.1, 1406.2.1.2, 2603.5.7, D105.1
275—*13*	Standard Method of Fire Tests for the Evaluation of Thermal Barriers Used Over Foam Plastic Insulation	
285—06	Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components	1407.10.4, 2603.5.5
286—06	Standard Method of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth	402.16.4, 803.1.2, 803.1.2.1, 803.9, 2603.4, 2603.9
288—12	Standard Method of Fire Tests of *Horizontal* Fire Door Assemblies Installed in *Horizontal* Fire-resistance-rated *Assemblies*	*712.8*
289—*13*	Standard Method of Fire Test for Individual Fuel Packages	
409—*11*	Aircraft Hangars	412.4.6, Table 412.4.6, 412.4.6.1, 412.6.5
418—06	Standard for Heliports	412.7.4
484—06	Combustible Metals	415.6.1
502—14	*Standard for Road Tunnels, Bridges, and Other Limited Access Highways*	*429*
654—*13*	Prevention of Fire & Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids	415.6.1
655—07	Prevention of Sulfur Fires and Explosions	415.6.1
664—07	Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities	415.6.1
701—04	Standard Methods of Fire Tests for Flame-propagation of Textiles and Films	402.12.1, 410.3.6, 801.1.4, 806.1, 806.1.2, 806.2, 3102.3, 3102.3.1, 3102.6.1.1, 3105.4, D102.2.8, H106.1.1
704—07	Standard System for the Identification of the Hazards of Materials for Emergency Response	414.7.2, 415.2
720—12	*Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment*	*420.6*
1124—*13*	Manufacture, Transportation, Storage*, and Retail Sales* of Fireworks and Pyrotechnic Articles	415.3.1
2001—*12*	Clean Agent Fire Extinguishing Systems, *as amended**	Table 901.6.1, 904.10

NFPA 2001, Amended Sections as follows:

4.3.5.1.1 *Alarms signals from the fire extinguishing system shall not interfere with the building fire alarm signal.*

4.3.5.2.1 *The lens on visual appliances shall be "red" in color.*

Exception: Other lens colors are permitted where approved by the enforcing agency.

PCI

Precast Prestressed Concrete Institute
209 W. Jackson Boulevard, Suite 500
Chicago, IL 60606-6938

Standard reference number	Title	Referenced in code section number
MNL 124—89	Design for Fire Resistance of Precast Prestressed Concrete	721.2.3.1
MNL 128—01	Recommended Practice for Glass Fiber Reinforced Concrete Panels	*1913.2.1*
PCI 120—10	*PCI Design Handbook 7th Edition*	*1905A.1*

PTI

Post-Tensioning Institute
8601 North Black Canyon Highway, Suite 103
Phoenix, AZ 85021

Standard reference number	Title	Referenced in code section number
PTI—2004	*Recommendations for Prestressed Rock and Soil Anchors (4th Edition)*	*1811A.2, 1810A.3.10.4, J106.2.4, J106.2.5*
PTI—2007	Standard Requirements for Analysis of Shallow Concrete Foundations on Expansive Soils, Third Edition	1808.6.2
PTI—2007	Standard Requirements for Design of Shallow Post-tensioned Concrete Foundation on Expansive Soils, Second Edition	1808.6.2

SFM

State of California
Department of Forestry and Fire Protection
Office of the State Fire Marshal
P.O. Box 944246
Sacramento, CA 94246-2460

Standard reference number	Title	Referenced in code section number
12-3	*Releasing Systems for Security Bars in Dwellings*	1029.4
12-7-3	*Fire-testing Furnaces*	NA
12-7A-1	*Exterior Wall Siding and Sheathing*	703A.7, 707A.2
12-7A-2	*Exterior Window*	703A.7, 708A.2.1
12-7A-3	*Under Eave*	703A.7, 707A.8
12-7A-4	*Decking*	703A.7, 709A.3
SFM 12-7A-4A	*Decking Alternate Method A*	703A.7, 709A.3
SFM 12-7A-5	*Ignition Resistant Building Material*	703A.7, 709A.3
12-8-100	*Room Fire Tests for Wall and Ceiling Materials*	NA
12-10-1	*Power Operated Exit Doors*	NA
12-10-2	*Single Point Latching or Locking Devices*	NA
12-10-3	*Emergency Exit and Panic Hardware*	NA

(The Office of the State Fire Marshal standards referred to above are found in the California Code of Regulations, Title 24, Part 12.)

RMI

Rack Manufacturers Institute
8720 Red Oak Boulevard, Suite 201
Charlotte, NC 28217

Standard reference number	Title	Referenced in code section number
ANSI/MH16.1—08	Specification for Design, Testing and Utilization of Industrial Steel Storage Racks	2208.1

SDI

Steel Deck Institute
P. O. Box 25
Fox River Grove, IL 60021

Standard reference number	Title	Referenced in code section number
ANSI/NC1.0—06	Standard for Noncomposite Steel Floor Deck	2209.2.2, 2209.2.2.1
ANSI/RD1.0—06	Standard for Steel Roof Deck	2209.2.3
ANSI/SDI-C-2012	Standard for Composite Steel Floor Deck Slabs	2210A.1.1.3

SJI

Steel Joist Institute
1173B London Links Drive
Forest, VA 24551

Standard reference number	Title	Referenced in code section number
CJ-1.0—06	Standard Specification for Composite Steel Joists, CJ-series	1604.3.3, 2203.2, 2206.1
JG-1.1—05	Standard Specification for Joist Girders	1604.3.3, 2203.2, 2206.1
K-1.1—05	Standard Specification for Open Web Steel Joists, K-series	1604.3.3, 2203.2, 2206.1
LH/DLH-1.1—05	Standard Specification for Longspan Steel Joists, LH-series and Deep Longspan Steel Joists, DLH-series	1604.3.3, 2203.2, 2206.1

SPRI

Single-Ply Roofing Institute
411 Waverly Oaks Road, Suite 331B
Waltham, MA 02452

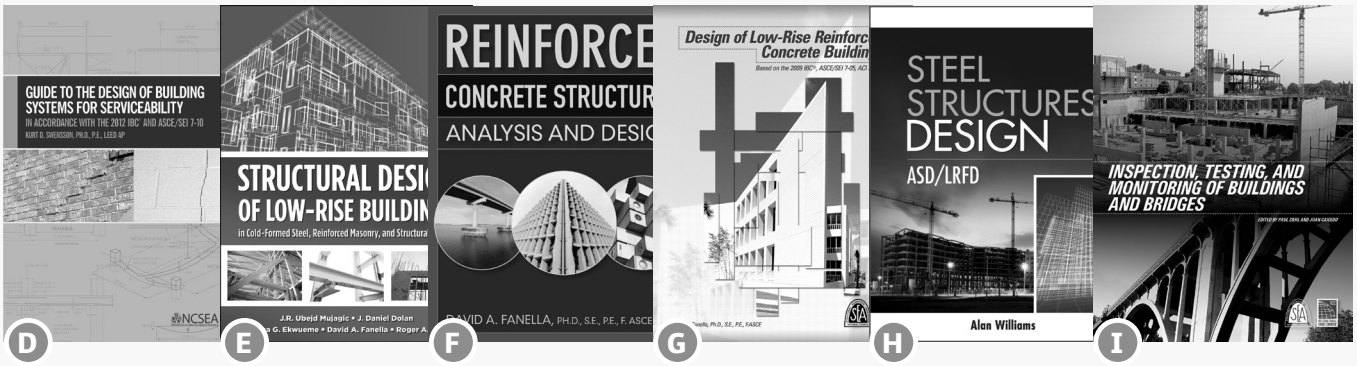
Standard reference number	Title	Referenced in code section number
SPRI/ANSI/ES-1—03	Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems	1504.5
RP-4—02	Wind Design Guide for Ballasted Single-ply Roofing Systems	1504.4

HISTORY NOTE APPENDIX

California Building Code
Title 24, Part 2, California Code of Regulations (CCR)

For prior code history, see the History Note Appendix to the *California Building Code (CBC),* 2010 Triennial Edition effective January 1, 2011.

1. BSC 03/12, SFM 02/12, OSHPD 03/12 & 04/12, DSA-SS 02/12, HCD 06/12, HCD 08/12, DSA-AC 01/12, BSCC 01/12, CDPH 01/12, SLC 01/12 — Adoption of the 2012 edition of the *International Building Code* published by the International Code Council, for incorporation into the *2013 California Building Code*, CCR Title 24, Part 2 with amendments for State regulated occupancies effective on January 1, 2014.
2. Errata to correct editorial errors within the preface as well as throughout various chapters in this code. Effective January 1, 2014.
3. *2013 Intervening Cycle Supplement; BSC 02/13, CDPH 01/13, DSA-AC 01/13, HCD 02/14 & HCD 04/13, OSHPD 01/13 & 02/13, SFM 01/13 – Approved by the California Building Standards Commission on July 22, 2014. Published on January 1, 2015 and effective July 1, 2015.*



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