REVISION RECORD FOR THE STATE OF CALIFORNIA

ERRATA

January 1, 2008

2007 Title 24, Part 2, California Building Code

PLEASE NOTE: The date of this errata is for identification purposes only.
See the History Note Appendix for the adoption and effective dates of the provisions.

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suggested that the section number as well as the page number be checked when inserting this material and removing the superseded material.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 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specifications, and construction for that permit, it is strongly recommended that the removed pages be retained for historical reference.

Volume 2

Remove Existing Pages	Insert Buff Pages
81and 82	81 and 82
121 through124	121 through 124
409 and 410	409 through 410.2
425 through 428	425 through 428
587 and 588	587 and 588
599 and 600	599 and 600
609 and 610	609 and 610
701 and 702	701 and 702

Item No. 5519S005

tures may be provided by the ceiling grid. Fixture support wires may be slightly loose to allow the fixture to seat in the grid system. Fixtures shall not be supported from main runners or cross runners if the weight of the fixtures causes the total dead load to exceed the deflection capability of the ceiling suspension system.

Fixtures shall not be installed so that the main runners or cross runners will be eccentrically loaded.

Surface-mounted fixtures shall be attached to the main runner with at least two positive clamping devices made of material with a minimum of 14 gage. Rotational spring catches do not comply. A 12-gage suspension wire shall be attached to each clamping device and to the structure above.

8. ***Mechanical services.*** *Terminals and services weighing no more than 20 pounds (9 kg) shall have two No. 12-gage hangers from the terminal or service to the structure above. These wires may be slack.*

9. ***Lighting fixtures.*** *All lighting fixtures shall be positively attached to the suspended ceiling system. The attachment device shall have a capacity of 100 percent of the lighting fixture weight acting in any direction.*

   Lighting fixtures weighing 56 pounds (25 kg) or more shall be supported directly from the structure above by approved hangers. In such cases the slack wires required by Item 7 above may be omitted.

10. ***Partitions.*** *Where the suspended ceiling system is required to provide lateral support for the permanent or relocatable partitions, the connection of the partition to the ceiling system, the ceiling system members and their connections, and the lateral-force bracing shall be designed to support the reaction force of the partition from prescribed loads applied perpendicular to the face of the partition. These partition reaction forces shall be in addition to the loads described in Item 6 above. Partition connectors, the suspended ceiling system and the lateral-force bracing shall all be engineered to suit the individual partition application and shall be shown or defined in the drawings or specifications.*

11. ***Construction documents.*** *The construction documents shall include detailing and specifications for suspended ceiling members, connections, support systems, light fixture and mechanical fixture attachments, partition supports and seismic bracing.*

1614A.1.13 ASCE 7, Section 13.6.1. *Modify ASCE 7 Section 13.6.1 by adding Sections 13.6.1.1 and 13.6.1.2 as followings:*

13.6.1.1 HVAC ductwork, plumbing/piping and conduit systems. Ductwork shall be constructed in accordance with provisions contained in Part 4, Title 24, California Mechanical Code. Where possible, pipes, conduit and their connections shall be constructed of ductile materials (copper, ductile iron, steel or aluminum and brazed, welded or screwed connections). Pipes, conduits and their connections, constructed of nonductile materials (e.g., cast iron, no-hub pipe and plastic), shall have the brace spacing reduced to satisfy requirements of ASCE 7 Chapter 13 and not to exceed one-half of the spacing allowed for ductile materials.

13.6.1.2 Trapeze assemblies. All trapeze assemblies supporting pipes, ducts and conduit shall be braced to resist the forces and relative displacements per ASCE 7 Chapter 13, considering the total weight of the elements on the trapeze.

Pipes, ducts and conduit supported by a trapeze where none of those elements would individually be braced need not be braced if connections to the pipe/conduit/ductwork or directional changes do not restrict the movement of the trapeze. If this flexibility is not provided, bracing will be required when the aggregate weight of the pipes and conduit exceed 10 pounds per foot (146 N/m). The weight shall be determined assuming all pipes and conduit are filled with water.

1614A.1.14 ASCE 7 Section 13.6.7. *Modify ASCE 7 Section 13.6.7 by the following:*

Requirements of this section shall also apply for l_p= 1.5.

1614A.1.15 ASCE 7, Section 13.6.10.1. *Modify ASCE 7 Section 13.6.10.1 by adding Section 13.6.10.1.1 as follows:*

13.6.10.1.1 Elevators guide rail support. The design of guide rail support bracket fastenings and the supporting structural framing shall use the weight of the counterweight or maximum weight of the car plus not more than 40 percent of its rated load. The seismic forces shall be assumed to be distributed one-third to the top guiding members and two-thirds to the bottom guiding members of cars and counterweights, unless other substantiating data are provided. In addition to the requirements of ASCE 7 Section 13.6.10.1, the minimum seismic forces shall be 0.5g acting in any horizontal direction.

1614A.1.16 ASCE 7, Section 13.6.10.4. *Replace ASCE 7 Section 13.6.10.4 as follows:*

13.6.10.4 Retainer plates. Retainer plates are required at the top and bottom of the car and counterweight, except where safety devices acceptable to the enforcement agency are provided which meet all requirements of the retainer plates, including full engagement of the machined portion of the rail. The design of the car, cab stabilizers, counterweight guide rails and counterweight frames for seismic forces shall be based on the following requirements:

1. *The seismic force shall be computed per the requirements of ASCE 7 Section 13.6.10.1. The*

minimum horizontal acceleration shall be 0.5g for all buildings.

2. *W_p shall equal the weight of the counterweight or the maximum weight of the car plus not less than 40 percent of its rated load.*
3. *With the car or counterweight located in the most adverse position, the stress in the rail shall not exceed the limitations specified in these regulations, nor shall the deflection of the rail relative to its supports exceed the deflection listed below:*

RAIL SIZE (weight per foot of length, pounds)	WIDTH OF MACHINED SURFACE (inches)	ALLOWABLE RAIL DEFLECTION (inches)
8	1 1/4	0.20
11	1 1/2	0.30
12	1 3/4	0.40
15	1 31/32	0.50
18 1/2	1 31/32	0.50
22 1/2	2	0.50
30	2 1/4	0.50

For SI: 1 inch = 25 mm, 1 foot = 305 mm, 1 pound = 0.454 kg.

Note: *Deflection limitations are given to maintain a consistent factor of safety against disengagement of retainer plates from the guide rails during an earthquake.*

4. *Where guide rails are continuous over supports and rail joints are within 2 feet (610 mm) of their supporting brackets, a simple span may be assumed.*
5. *The use of spreader brackets is allowed.*
6. *Cab stabilizers and counterweight frames shall be designed to withstand computed lateral load with a minimum horizontal acceleration of 0.5g.*

1614A.1.17 ASCE 7, Section 15.4.1. *Modify ASCE 7 Section 15.4.1 by replacing Equations 15.4-1 and 15.4-3 as follows:*

$$C_s = 0.17 \qquad (15.4\text{-}1)$$

$$C_s = 0.06 \qquad (15.4\text{-}3)$$

1614A.1.18 ASCE 7, Section 17.2.1. *Modify ASCE 7 Section 17.2.1 by adding the following:*

The importance factor, I_p, for parts and portions of a seismically isolated building shall be the same as that required for a fixed-base building of the same occupancy category.

1614A.1.19 ASCE 7, Section 17.2.4.7. *Modify ASCE 7 Section 17.2.4.7 by adding the following:*

The effects of uplift and/or rocking shall be explicitly accounted for in the analysis and in the testing of the isolator units.

1614A.1.20 ASCE 7, Section 17.2.4.8. *Modify ASCE 7 Section 17.2.4.8 by adding the following:*

f. Inspection and replacement programs shall be submitted to the enforcement agency for approval with the plans and specifications and shall be a condition of occupancy for the structure.

g. After every significant seismic event, the owner shall retain a structural engineer to make an inspection of the structural system. The inspection shall consist of viewing the performance of the building, reviewing the strong motion records and a visual examination of the isolators and their connections for deterioration, offset or physical damage. A report for each inspection, including conclusions on the continuing adequacy of the structural system, shall be submitted as required to the enforcement agency.

1614A.1.21 ASCE 7, Section 17.2.4.9. *Modify ASCE 7 Section 17.2.4.9 by adding the following:*

The quality control testing program shall include provisions for both prototype and production isolator units. The quality control testing program shall be subject to preapproval by the enforcement agency.

1614A.1.22 ASCE 7, Section 17.2.4. *Modify ASCE 7 Section 17.2.4 by adding Section 17.2.4.10 as follows:*

17.2.4.10 Instrumentation. A proposal for instrumentation and equipment specifications shall be forwarded to the enforcement agency for approval.

There shall be sufficient numbers of instruments to characterize the response of the building during an earthquake. Motion measuring instruments shall be located within the building and at levels immediately above and below the isolators. The owner of the building is responsible for the implementation of the instrumentation program. Maintenance of the instrumentation and removal and processing of the records shall be the responsibility of the enforcement agency or its designated agent.

1614A.1.23 ASCE 7, Section 17.2.5.2. *Modify ASCE 7 Section 17.2.5.2 by adding the following:*

The separation requirements for the building above the isolation system and adjacent buildings shall be the sum of the factored displacements for each building. The factors to be used in determining separations shall be:

1. *For seismically isolated buildings, the elastic deformation resulting from the dynamic analyses using the maximum considered earthquake unmodified by R_I.*
2. *For fixed-based buildings, C_d times the elastic deformations resulting from an equivalent static analysis using the seismic base shear computed via ASCE 7 Section 12.8.*

1614A.1.24 ASCE 7, Section 17.3.1. *Modify ASCE 7 Section 17.3.1 by adding the following:*

Site-specific ground motion spectra of the design earthquake and the maximum considered earthquake, developed in accordance with Section 1802A.6 and ASCE 7, shall be used for design and analysis of all seis-

ment determines that the load-bearing capacity is less than that required by the code, load tests shall be conducted in accordance with Section 1713*A*.2. If the building, structure or portion thereof is found to have inadequate stability or load-bearing capacity for the expected loads, modifications to ensure structural adequacy or the removal of the inadequate construction shall be required.

1713*A*.2 Test standards. Structural components and assemblies shall be tested in accordance with the appropriate material standards listed in Chapter 35. In the absence of a standard that contains an applicable load test procedure, the test procedure shall be developed by a registered design professional and approved. The test procedure shall simulate loads and conditions of application that the completed structure or portion thereof will be subjected to in normal use.

1713*A*.3 In-situ load tests. In-situ load tests shall be conducted in accordance with Section 1713*A*.3.1 or 1713*A*.3.2 and shall be supervised by a registered design professional. The test shall simulate the applicable loading conditions specified in Chapter 16*A* as necessary to address the concerns regarding structural stability of the building, structure or portion thereof.

1713*A*.3.1 Load test procedure specified. Where a standard listed in Chapter 35 contains an applicable load test procedure and acceptance criteria, the test procedure and acceptance criteria in the standard shall apply. In the absence of specific load factors or acceptance criteria, the load factors and acceptance criteria in Section 1713*A*.3.2 shall apply.

1713*A*.3.2 Load test procedure not specified. In the absence of applicable load test procedures contained within a standard referenced by this code or acceptance criteria for a specific material or method of construction, such existing structure shall be subjected to a test procedure developed by a registered design professional that simulates applicable loading and deformation conditions. For components that are not a part of the seismic-load-resisting system, the test load shall be equal to two times the unfactored design loads. The test load shall be left in place for a period of 24 hours. The structure shall be considered to have successfully met the test requirements where the following criteria are satisfied:

1. Under the design load, the deflection shall not exceed the limitations specified in Section 1604*A*.3.
2. Within 24 hours after removal of the test load, the structure shall have recovered not less than 75 percent of the maximum deflection.
3. During and immediately after the test, the structure shall not show evidence of failure.

SECTION 1714*A*
PRECONSTRUCTION LOAD TESTS

1714*A*.1 General. In evaluating the physical properties of materials and methods of construction that are not capable of being designed by approved engineering analysis or do not comply with applicable material design standards listed in Chapter 35, the structural adequacy shall be predetermined based on the load test criteria established in this section.

1714*A*.2 Load test procedures specified. Where specific load test procedures, load factors and acceptance criteria are included in the applicable design standards listed in Chapter 35, such test procedures, load factors and acceptance criteria shall apply. In the absence of specific test procedures, load factors or acceptance criteria, the corresponding provisions in Section 1714*A*.3 shall apply.

1714*A*.3 Load test procedures not specified. Where load test procedures are not specified in the applicable design standards listed in Chapter 35, the load-bearing and deformation capacity of structural components and assemblies shall be determined on the basis of a test procedure developed by a registered design professional that simulates applicable loading and deformation conditions. For components and assemblies that are not a part of the seismic-load-resisting system, the test shall be as specified in Section 1714*A*.3.1. Load tests shall simulate the applicable loading conditions specified in Chapter 16*A*.

1714*A*.3.1 Test procedure. The test assembly shall be subjected to an increasing superimposed load equal to not less than two times the superimposed design load. The test load shall be left in place for a period of 24 hours. The tested assembly shall be considered to have successfully met the test requirements if the assembly recovers not less than 75 percent of the maximum deflection within 24 hours after the removal of the test load. The test assembly shall then be reloaded and subjected to an increasing superimposed load until either structural failure occurs or the superimposed load is equal to two and one-half times the load at which the deflection limitations specified in Section 1714*A*.3.2 were reached, or the load is equal to two and one-half times the superimposed design load. In the case of structural components and assemblies for which deflection limitations are not specified in Section 1714*A*.3.2, the test specimen shall be subjected to an increasing superimposed load until structural failure occurs or the load is equal to two and one-half times the desired superimposed design load. The allowable superimposed design load shall be taken as the lesser of:

1. The load at the deflection limitation given in Section 1714*A*.3.2.
2. The failure load divided by 2.5.
3. The maximum load applied divided by 2.5.

1714*A*.3.2 Deflection. The deflection of structural members under the design load shall not exceed the limitations in Section 1604*A*.3.

1714*A*.4 Wall and partition assemblies. Load-bearing wall and partition assemblies shall sustain the test load both with and without window framing. The test load shall include all design load components. Wall and partition assemblies shall be tested both with and without door and window framing.

1714*A*.5 Exterior window and door assemblies. The design pressure rating of exterior windows and doors in buildings shall be determined in accordance with Section 1714*A*.5.1 or 1714*A*.5.2.

Exception: Structural wind load design pressures for window units smaller than the size tested in accordance with Section 1714*A*.5.1 or 1714*A*.5.2 shall be permitted to be higher than the design value of the tested unit provided such

higher pressures are determined by accepted engineering analysis. All components of the small unit shall be the same as the tested unit. Where such calculated design pressures are used, they shall be validated by an additional test of the window unit having the highest allowable design pressure.

1714A.5.1 Exterior windows and doors. Exterior windows and sliding doors shall be tested and labeled as conforming to AAMA/WDMA/CSA101/I.S.2/A440. The label shall state the name of the manufacturer, the approved labeling agency and the product designation as specified in AAMA/WDMA/CSA101/I.S.2/A440. Exterior side-hinged doors shall be tested and labeled as conforming to AAMA/WDMA/CSA101/I.S.2/A440 or comply with Section 1714A.5.2. Products tested and labeled as conforming to AAMA/WDMA/CSA 101/I.S.2/A440 shall not be subject to the requirements of Sections 2403.2 and 2403.3.

1714*A*.5.2 Exterior windows and door assemblies not provided for in Section 1714*A*.5.1. Exterior window and door assemblies shall be tested in accordance with ASTM E 330. Exterior window and door assemblies containing glass shall comply with Section 2403. The design pressure for testing shall be calculated in accordance with Chapter 16*A*. Each assembly shall be tested for 10 seconds at a load equal to 1.5 times the design pressure.

1714*A*.6 Test specimens. Test specimens and construction shall be representative of the materials, workmanship and details normally used in practice. The properties of the materials used to construct the test assembly shall be determined on the basis of tests on samples taken from the load assembly or on representative samples of the materials used to construct the load test assembly. Required tests shall be conducted or witnessed by an approved agency.

SECTION 1715*A*
MATERIAL AND TEST STANDARDS

1715*A*.1 Test standards for joist hangers and connectors.

1715*A*.1.1 Test standards for joist hangers. The vertical load-bearing capacity, torsional moment capacity and deflection characteristics of joist hangers shall be determined in accordance with ASTM D 1761 using lumber having a specific gravity of 0.49 or greater, but not greater than 0.55, as determined in accordance with AF&PA NDS for the joist and headers.

Exception: The joist length shall not be required to exceed 24 inches (610 mm).

1715*A*.1.2 Vertical load capacity for joist hangers. The vertical load capacity for the joist hanger shall be determined by testing a minimum of three joist hanger assemblies as specified in ASTM D 1761. If the ultimate vertical load for any one of the tests varies more than 20 percent from the average ultimate vertical load, at least three additional tests shall be conducted. The allowable vertical load of the joist hanger shall be the lowest value determined from the following:

1. The lowest ultimate vertical load for a single hanger from any test divided by three (where three tests are conducted and each ultimate vertical load does not vary more than 20 percent from the average ultimate vertical load).
2. The average ultimate vertical load for a single hanger from all tests divided by three (where six or more tests are conducted).
3. The average from all tests of the vertical loads that produce a vertical movement of the joist with respect to the header of 0.125 inch (3.2 mm).
4. The sum of the allowable design loads for nails or other fasteners utilized to secure the joist hanger to the wood members and allowable bearing loads that contribute to the capacity of the hanger.
5. The allowable design load for the wood members forming the connection.

1715*A*.1.3 Torsional moment capacity for joist hangers. The torsional moment capacity for the joist hanger shall be determined by testing at least three joist hanger assemblies as specified in ASTM D 1761. The allowable torsional moment of the joist hanger shall be the average torsional moment at which the lateral movement of the top or bottom of the joist with respect to the original position of the joist is 0.125 inch (3.2 mm).

1715*A*.1.4 Design value modifications for joist hangers. Allowable design values for joist hangers that are determined by Item 4 or 5 in Section 1715*A*.1.2 shall be permitted to be modified by the appropriate duration of loading factors as specified in AF&PA NDS but shall not exceed the direct loads as determined by Item 1, 2 or 3 in Section 1715*A*.1.2. Allowable design values determined by Item 1, 2 or 3 in Section 1715*A*.1.2 shall not be modified by duration of loading factors.

1715*A*.2 Concrete and clay roof tiles.

1715*A*.2.1 Overturning resistance. Concrete and clay roof tiles shall be tested to determine their resistance to overturning due to wind in accordance with SBCCI SSTD 11 and Chapter 15.

1715*A*.2.2 Wind tunnel testing. When roof tiles do not satisfy the limitations in Chapter 16*A* for rigid tile, a wind tunnel test shall be used to determine the wind characteristics of the concrete or clay tile roof covering in accordance with SBCCI SSTD 11 and Chapter 15.

CALIFORNIA BUILDING CODE – MATRIX ADOPTION TABLE
CHAPTER 18 – SOILS AND FOUNDATIONS

Adopting Agency		BSC	SFM	HCD			DSA		OSHPD				CSA	DHS	AGR	DWR	CEC	CA	SL	SLC
				1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter		X									X									
Adopt Entire Chapter as amended (amended sections listed below)				X	X					X										
Adopt only those sections that are listed below																				
Chapter / Section	Codes																			
1801.2	IBC			X	X															
1802.1.1	CA			X	X															
1802.1.1.1	CA			X	X															
1802.1.1.2	CA			X	X															
1802.1.1.3	CA			X	X															
1802.2	IBC									X										
1802.6	IBC									X										
1802.7	CA									X										
1802.8	CA									X										

CHAPTER 29

PLUMBING SYSTEMS
(Not Adopted by the State of California)

SECTION 2901
GENERAL

2901.1 Scope. The provisions of the *California Plumbing Code* shall govern the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the *California Plumbing Code.* Private sewage disposal systems shall conform to the *California Plumbing Code.* For Minimum Plumbing Fixture Requirements see Table 4-1 of the 2007 California Plumbing Code.

[P] TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Section 412.3)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 408.0 OF THE *CALIFORNIA PLUMBING CODE*)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (SEE SECTION 406.5 OF THE *CALIFORNIA PLUMBING CODE)*	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	Assembly (see Section 412.3)	A-1[d]	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
		A-2[d]	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	1 service sink
			Restaurants, banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	1 service sink
		A-3[d]	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 65	1 per 200		—	1 per 500	1 service sink
			Passenger terminals and transportation facilities	1 per 500	1 per 500	1 per 750		—	1 per 1,000	1 service sink
			Places of worship and other religious services	1 per 150	1 per 75	1 per 200		—	1 per 1,000	1 service sink
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	—	1 per 1,000	1 service sink
		A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	—	1 per 1,000	1 service sink

(continued)

[P] TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Section 412.3)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 408.0 OF THE *CALIFORNIA PLUMBING CODE*)		LAVATORIES		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS (SEE SECTION 406.5 OF THE *CALIFORNIA PLUMBING CODE)*	OTHER
				MALE	FEMALE	MALE	FEMALE			
2	Business (see Sections 2902.2, 2902.4 and 2902.4.1)	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50		1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80		—	1 per 100	1 service sink
3	Educational	E	Educational facilities	1 per 50		1 per 50		—	1 per 100	1 service sink
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials	1 per 100		1 per 100		See Section 411 of the *International Plumbing Code*	1 per 400	1 service sink
5	Institutional	I-1	Residential care	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		I-2	Hospitals, ambulatory nursing home patients[b]	1 per per room[c]		1 per per room[c]		1 per 15	1 per 100	1 service sink
			Employees, other than residential care[b]	1 per 25		1 per 35		—	1 per 100	—
			Visitors, other than residential care	1 per 75		1 per 100		—	1 per 500	—
		I-3	Prisons[b]	1 per cell		1 per cell		1 per 15	1 per 100	1 service sink
		I-3	Reformatories, detention centers and correctional centers[b]	1 per 15		1 per 15		1 per 15	1 per 100	1 service sink
		I-4	Adult day care and child care	1 per 15		1 per 15		—	1 per 100	1 service sink
6	Mercantile (see Section 2902.2, 2902.4, 2902.4.1 and 2902.4.2)	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	1 service sink
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	1 service sink
		R-2	Dormitories, fraternities, sororities and boarding house (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units

(continued)

[P] TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES[a]
(See Section 412.3)

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS (URINALS SEE SECTION 408.0 OF THE *CALIFORNIA PLUMBING CODE*)		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS (SEE SECTION 406.5 OF THE *CALIFORNIA PLUMBING CODE)*	OTHER
				MALE	FEMALE	MALE	FEMALE			
7	Residential	R-3	One- and two-family dwellings	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units
		R-4	Residential care/assisted living facilities	1 per 10		1 per 10		1 per 8	1 per 100	1 service sink
8	Storage (see Sections 2902.2, 2902.4 and 2902.4.1)	S-1 S-2	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard	1 per 100		1 per 100		See Section 411 of the *International Plumbing Code*	1 per 1,000	1 service sink

a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by this code.
b. Toilet facilities for employees shall be separate from facilities for inmates or patients.
c. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient rooms shall be permitted where such room is provided with direct access from each patient room and with provisions for privacy.
d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.

protrusions except for normal construction tolerances and tooled masonry joints.

3109.4.1.3 Closely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

3109.4.1.4 Widely spaced horizontal members. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

3109.4.1.5 Chain link dimensions. Maximum mesh size for chain link fences shall be a 2.25 inch square (57 mm square) unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to no more than 1.75 inches (44 mm).

3109.4.1.6 Diagonal members. Where the barrier is composed of diagonal members, the maximum opening formed by the diagonal members shall be no more than 1.75 inches (44 mm).

3109.4.1.7 Gates. Access gates shall comply with the requirements of Sections 3109.4.1.1 through 3109.4.1.6 and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Release mechanisms shall be in accordance with Sections 1008.1.8 and 1109.13. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate, and the gate and barrier shall have no opening greater than 0.5 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

3109.4.1.8 Dwelling wall as a barrier. Where a wall of a dwelling serves as part of the barrier, one of the following shall apply:

1. Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017. The audible alarm shall activate within 7 seconds and sound continuously for a minimum of 30 seconds after the door and/or its screen, if present, are opened and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm shall be equipped with a manual means, such as touchpad or switch, to temporarily deactivate the alarm for a single opening. Such deactivation shall last for not more than 15 seconds. In dwellings not required to be Accessible, Type A or Type B units, the deactivation switch shall be located 54 inches (1372 mm) or more above the threshold of the door. In dwellings required to be Accessible, Type A or Type B units, the deactivation switch(es) shall be located at 54 inches (1372 mm) maximum and 48 inches (1219 mm) minimum above the threshold of the door.
2. The pool shall be equipped with a power safety cover that complies with ASTM F 1346.
3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the administrative authority, shall be accepted so long as the degree of protection afforded is not less than the protection afforded by Section 3109.4.1.8, Item 1 or 2.

3109.4.1.9 Pool structure as barrier. Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then the ladder or steps either shall be capable of being secured, locked or removed to prevent access, or the ladder or steps shall be surrounded by a barrier which meets the requirements of Sections 3109.4.1.1 through 3109.4.1.8. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

3109.4.2 Indoor swimming pools. Walls surrounding indoor swimming pools shall not be required to comply with Section 3109.4.1.8.

3109.4.3 Prohibited locations. Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers.

3109.4.4 Private swimming pools (statewide). *These regulations are subject to local government modification. The applicable local government requirements at the time of application for a building permit should be verified. These standards become applicable commencing January 1, 1998, to a private, single-family home for which a construction permit for a new swimming pool has been issued on or after January 1, 1998.*

3109.4.4.1 Definitions. *As used in this division, the following terms have the following meanings:*

APPROVED SAFETY POOL COVER *means a manually or power-operated safety pool cover that meets all of the performance standards of the American Society for Testing and Materials (ASTM), in compliance with Standard F 1346-91.*

ENCLOSURE *means a fence, wall or other barrier that isolates a swimming pool from access to the home.*

EXIT ALARMS *means devices that make audible, continuous alarm sounds when any door or window that permits access from the residence to the pool area, that is without any intervening enclosure, is opened or is left ajar. Exit alarms may be battery operated or may be connected to the electrical wiring of the building.*

PUBLIC SWIMMING POOL *means a swimming pool operated for the use of the general public with or without charge, or for the use of the members and guests of a private club. Public swimming pool does not include a swimming pool located on the grounds of a private single-family home.*

SWIMMING POOL *or* ***POOL*** *means any structure intended for swimming or recreational bathing that contains water over 18 inches (457 mm) deep. Swimming pool includes in-ground and above-ground structures and includes, but is not limited to, hot tubs, spas, portable spas and nonportable wading pools.*

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115921
Ab 3305, Statutes 1996, C.925

3109.4.4.2 Construction permit; safety features required. *Commencing January 1, 2007, except as provided in Section 3109.4.4.5, whenever a building permit is issued for construction of a new swimming pool or spa, or any building permit is issued for remodeling of an existing pool or spa, at a private, single-family home, it shall be equipped with at least one of the following seven drowning prevention safety features:*

1. *The pool shall be isolated from access to a home by an enclosure that meets the requirements of Section 3109.4.4.3.*
2. *The pool shall incorporate removable mesh pool fencing that meets American Society for Testing and Materials (ASTM) Specifications F 2286 standards in conjunction with a gate that is self-closing and self-latching and can accommodate a key lockable device.*
3. *The pool shall be equipped with an approved safety pool cover that meets all requirements of the ASTM Specifications F 1346.*
4. *The residence shall be equipped with exit alarms on those doors providing direct access to the pool.*
5. *All doors providing direct access from the home to the swimming pool shall be equipped with a self-closing, self-latching device with a release mechanism placed no lower than 54 inches (1372 mm) above the floor.*
6. *Swimming pool alarms that, when placed in pools, will sound upon detection of accidental or unauthorized entrance into the water. These pool alarms shall meet and be independently certified to the ASTM Standard F 2208 "Standards Specification for Pool Alarms" which includes surface motion, pressure, sonar, laser and infrared type alarms. For purposes of this article, "swimming pool alarms" shall not include swimming protection alarm devices designed for individual use, such as an alarm attached to a child that sounds when the child exceeds a certain distance or becomes submerged in water.*
7. *Other means of protection, if the degree of protection afforded is equal to or greater than that afforded by any of the devices set forth in items 1-4, and have been independently verified by an approved testing laboratory as meeting standards for those devices established by the ASTM or the American Society of Testing Mechanical Engineers (ASME).*

Prior to the issuance of any final approval for the completion of permitted construction or remodeling work, the local building code official shall inspect the drowning safety prevention devices required by this act and if no violations are found, shall give final approval.

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115922
AB 3305 (Statutes 1996, c.925); AB 2977 (Statutes 2006, c.926); AB 382 (Statutes 2007, c.XXX)

3109.4.4.3 Enclosure; required characteristics. *An enclosure shall have all of the following characteristics:*

1. *Any access gates through the enclosure open away from the swimming pool and are self-closing with a self-latching device placed no lower than 60 inches (1524 mm) above the ground.*
2. *A minimum height of 60 inches (1524 mm).*
3. *A maximum vertical clearance from the ground to the bottom of the enclosure of 2 inches (51 mm).*
4. *Gaps or voids, if any, do not allow passage of a sphere equal to or greater than 4 inches (102 mm) in diameter.*
5. *An outside surface free of protrusions, cavities or other physical characteristics that would serve as handholds or footholds that could enable a child below the age of five years to climb over.*

Authority: Health and Safety Code Section 18942(b)
Reference: Health and Safety Code Section 115923
Ab 3305, Statutes 1996, C.925

3109.4.4.4 Agreements to build; notice of provisions. *Any person entering into an agreement to build a swimming pool or spa, or to engage in permitted work on a pool or spa covered by this article, shall give the consumer notice of the requirements of this article.*

Pursuant to existing law, the Department of Health Services shall have available on the department's web site, commencing January 1, 2007, approved pool safety information available for consumers to download. 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 115926
AB 3305 (Statutes 1996, c.925); AB 2977 (Statutes 2006, c.926); AB 382 (Statutes 2007, c.XXX)

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.926); AB 382 (Statutes 2007,c.XXX)

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.926); AB 382 (Statutes 2007, c.XXX)

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.926); AB 382 (Statutes 2007, c.XXX)

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 outlet 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 paragraph 2.*
2. *The swimming pool or spa shall have at least two circulation drains 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 drains. Suction outlets that are less than 12 inches across shall be covered with antientrapment grates, as specified in the ASME/ANSI Standard A 112.19.8, 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 pose any suction hazard to bathers.*
3. *Any backup safety system that an owner of a new swimming pools or spa may choose to install in addition to the requirements set forth in subdivisions (1) and (2) 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.*
4. *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 of the existing swimming pool, toddler pool or spa be upgraded so as to be equipped with an antientrapment cover meeting current standards of the American Society for Testing and Materials (ASTM) or the American Society of Mechanical Engineers (ASME).*

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.926); AB 382 (Statutes 2007, c.XXX)

3109.5 Entrapment avoidance. Suction outlets shall be designed to produce circulation throughout the pool or spa. Single-outlet systems, such as automatic vacuum cleaner systems, or other such multiple suction outlets whether isolated by valves or otherwise shall be protected against user entrapment.

3109.5.1 Suction fittings. All pool and spa suction outlets shall be provided with a cover that conforms to ASME A112.19.8M, a 12-inch by 12-inch (305 mm by 305 mm) drain grate or larger, or an approved channel drain system.

Exception: Surface skimmers.

3109.5.2 Atmospheric vacuum relief system required. All pool and spa single- or multiple-outlet circulation systems shall be equipped with an atmospheric vacuum relief

should grate covers located therein become missing or broken. Such vacuum relief systems shall include at least one approved or engineered method of the type specified herein, as follows:

1. Safety vacuum release systems conforming to ASME A112.19.17; or
2. Approved gravity drainage system.

3109.5.3 Dual drain separation. Single- or multiple-pump circulation systems shall be provided with a minimum of two suction outlets of the approved type. A minimum horizontal or vertical distance of 3 feet (914 mm) shall separate such outlets. These suction outlets shall be piped so that water is drawn through them simultaneously through a vacuum-relief-protected line to the pump or pumps.

3109.5.4 Pool cleaner fittings. Where provided, vacuum or pressure cleaner fitting(s) shall be located in an accessible position(s) at least 6 inches (152 mm) and not greater than 12 inches (305 mm) below the minimum operational water level or as an attachment to the skimmer(s).

AITC

American Institute of Timber Construction
Suite 140
7012 S. Revere Parkway
Englewood, CO 80112

Standard reference number	Title	Referenced in code section number
AITC Technical Note 7-96	Calculation of Fire Resistance of Glued Laminated Timbers	721.6.3.3
AITC 104-03	Typical Construction Details	2306.1
AITC 110-01	Standard Appearance Grades for Structural Glued Laminated Timber	2306.1
AITC 111-05	*Recommended Practice for Protection of Structural Glued Laminated Timber During Transit, Storage and Erection*	*2303.1.3.1*
AITC 113-01	Standard for Dimensions of Structural Glued Laminated Timber	2306.1
AITC 117-04	Standard Specifications for Structural Glued Laminated Timber of Softwood Species	2306.1
AITC 119-96	Standard Specifications for Structural Glued Laminated Timber of Hardwood Species	2306.1
AITC 200-04	Manufacturing Quality Control Systems Manual for Structural Glued Laminated Timber	2306.1
AITC 404-05	*Standard for Radially Reinforcing Curved Glued Laminate Timber Members to Resist Radial Tension*	*2303.1.3.1*
ANSI/AITC A 190.1-02	Structural Glued Laminated Timber	2303.1.3, 2306.1

ALI

Automotive Lift Institute
P.O. Box 85
Courtland, NY 13045

Standard reference number	Title	Referenced in code section number
ALI ALCTV-98	Standard for Automotive Lifts—Safety Requirements for Construction, Testing and Validation (ANSI)	3001.2

ANSI

American National Standards Institute
25 West 43rd Street, Fourth Floor
New York, NY 10036

Standard reference number	Title	Referenced in code section number
A13.1-96 (Reaffirmed 2002)	Scheme for the Identification of Piping Systems	415.8.6.4
A108.1A-99	Installation of Ceramic Tile in the Wet-set Method, with Portland Cement Mortar	2103.1
A108.1B-99	Installation of Ceramic Tile, Quarry Tile on a Cured Portland Cement Mortar Setting Bed with Dry-set or Latex-portland Mortar	2103.1
A108.4-99	Installation of Ceramic Tile with Organic Adhesives or Water-cleanable Tile-setting Epoxy Adhesive	2103.10.6
A108.5-99	Installation of Ceramic Tile with Dry-set Portland Cement Mortar or Latex-portland Cement Mortar	2103.9.3, 2103.10.1, 2103.10.2
A108.6-99	Installation of Ceramic Tile with Chemical-resistant, Water Cleanable Tile-setting and -grouting Epoxy	2103.10.3
A108.8-99	Installation of Ceramic Tile with Chemical-resistant Furan Resin Mortar and Grout	2103.10.4
A108.9-99	Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout	2103.10.5
A108.10-99	Installation of Grout in Tilework	2103.10.7
A118.1-99	American National Standard Specifications for Dry-set Portland Cement Mortar	2103.10.1
A118.3-99	American National Standard Specifications for Chemical-resistant, Water-cleanable Tile-setting and -grouting Epoxy and Water Cleanable Tile-setting Epoxy Adhesive	2103.10.3
A118.4-99	American National Standard Specifications for Latex-portland Cement Mortar	2103.10.2
A118.5-99	American National Standard Specifications for Chemical Resistant Furan Mortar and Grouts for Tile Installation	2103.10.4
A118.6-99	American National Standard Specifications for Cement Grouts for Tile Installation	2103.10.7
A118.8-99	American National Standard Specifications for Modified Epoxy Emulsion Mortar/Grout	2103.10.5
A136.1-99	American National Standard Specifications for Organic Adhesives for Installation of Ceramic Tile	2103.10.6
A137.1-88	American National Standard Specifications for Ceramic Tile	2103.5
A208.1-99	Particleboard	2303.1.7, 2303.1.7.1
S3.41-90 (R2001)	*American National Standard Audible Evacuation Signal*	*907.9.2.1*
Z 97.1-84 (R1994)	Safety Glazing Materials Used in Buildings—Safety Performance Specifications and Methods of Test (Reaffirmed 1994)	2306.1.2, *2406.1.2*, 2409.1, *7-3094.2*

APA

APA - Engineered Wood Association
P.O. Box 11700
Tacoma, WA 98411-0700

Standard reference number	Title	Referenced in code section number
APA PDS-04	Panel Design Specification	2306.1, 2306.3.1, 2306.4.1
APA PDS Supplement 1-90	Design and Fabrication of Plywood Curved Panels (revised 1995)	2306.1
APA PDS Supplement 2-92	Design and Fabrication of Plywood-lumber beams (revised 1998)	2306.1
APA PDS Supplement 3-90	Design and Fabrication of Plywood Stressed-skin Panels (revised 1996)	2306.1
APA PDS Supplement 4-90	Design and Fabrication of Plywood Sandwich Panels (revised 1993)	2306.1
APA PDS Supplement 5-95	Design and Fabrication of All-plywood Beams (revised 1995)	2306.1
EWS R540-96	Builders Tips: Proper Storage and Handling of Glulam Beams	2306.1
EWS S475-01	Glued Laminated Beam Design Tables	2306.1
EWS S560-03	Field Notching and Drilling of Glued Laminated Timber Beams	2306.1
EWS T300-02	Glulam Connection Details	2306.1
EWS X440-00	Product Guide—Glulam	2306.1
EWS X450-01	Glulam in Residential Construction—Western Edition	2306.1

ASAE

American Society of Agricultural Engineers
2950 Niles Road
St. Joseph, MI 49085-9659

Standard reference number	Title	Referenced in code section number
EP 484.2 (1998)	Diaphragm Design of Metal-clad, Post-frame Rectangular Buildings	2306.1
EP 486.1 (2000)	Shallow-post Foundation Design	2306.1
EP 559 (1997)	Design Requirements and Bending Properties for Mechanically Laminated Columns	2306.1

ASCE/SEI

American Society of Civil Engineers
Structural Engineering Institute
1801 Alexander Bell Drive
Reston, VA 20191-4400

Standard reference number	Title	Referenced in code section number
3-91	Structural Design of Composite Slabs	1604.3.3, 2209.2
5-05	Building Code Requirements for Masonry Structures	1405.5, 1405.5.2, 1405.9, 1604.3.4, 1704.5, 1704.5.1, Table 1704.5.1, 1704.5.2, 1704.5.3, Table 1704.5.3, 1708.1.1, 1708.1.2, 1708.1.3, 1708.1.4, 1805.5.2, 1812.7, 2101.2.2, 2101.2.3, 2101.2.4, 2101.2.5, 2101.2.6, 2103.1.3.6, 2106.1, 2106.1.1, 2106.1.1.1, 2106.1.1.2, 2106.1.1.3, 2106.3, 2106.4, 2106.5, 2106.6, 2107.1, 2107.2, 2107.3, 2107.4, 2107.5, 2107.6, 2107.7, 2170.8, 2108.1, 2108.2, 2108.3, 2108.4, 2109.1, 2109.2.3.1, 2109.7.3
6-05	Specifications for Masonry Structures	1405.5.1, Table 1704.5.1, Table 1704.5.3, 1805.5.2.2, 2103.13.7, 2104.1, 2104.1.1, 2104.3, 2104.4
7-05	Minimum Design Loads for Buildings and Other Structures including Supplement No. 1 and excluding Chapter 14 and Appendix 11A	1602.1, 1604.3, 1604.10, 1605.1, 1605.2.2, 1605.3.1.2, 1605.3.2, 1605.4, 1607.11.1, 1608.1, 1608.2, 1609.1.1, 1609.1.2, 1609.3, 1609.5.1, 1609.5.3, 1611.2, 1612.2, 1613.1, 1613.2, Table 1613.5.3(1), Table 1613.5.3(2), 1613.5.6, 1613.5.6.1, 1613.5.6.2, 1613.6, 1613.6.1, 1613.6.2, 1801.2.1, 1802.2.7, 2205.2.1, 2205.3, 2205.3.1, 2208.1, 2305.1.5, 2305.2.5, 2305.3.1, 2306.4.5, Table 2306.4.5, Table 2308.10.1
8-02	Standard Specification for the Design of Cold-formed Stainless Steel Structural Members	1604.3.3, 2209.1
19-96	Structural Applications of Steel Cables for Buildings	2207.1, 2207.2
24-05	Flood Resistant Design and Construction	1203.3.2, 1612.4, 1612.5, 3001.2
29-05	Standard Calculation Methods for Structural Fire Protection	721.1
32-01	Design and Construction of Frost Protected Shallow Foundations	1805.2.1
41-06	*Seismic Rehabilitation of Existing Buildings*	*3415.5, 3415.6, 3415.8, 3417.2, 3417.5, 3417.7, 3417.9*

NAAMM

National Association of Architectural Metal Manufacturers
8 South Michigan Ave
Chicago, IL 60603

Standard reference number	Title	Referenced in code section number
FP1001-97	Guide Specifications for Design of Metal Flag Poles	1609.1.1

NCMA

National Concrete Masonry Association
2302 Horse Pen Road
Herndon, VA 22071-3499

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 02269-9101

Standard reference number	Title	Referenced in code section number
11-*05*	Low, *Meduim and High* Expansion Foam	905
12-*05*	Carbon Dioxide Extinguishing Systems	904.8, 904.11
12A-04	Halon 1301 Fire Extinguishing Systems.	904.9
13-02	Installation of Sprinkler Systems, *as amended**	707.2, 903.2.5.1, 903.2.15, 903.3.1.1, 903.3.2, 903.3.5.1.1, 903.3.5.2, 904.11, 905.3.4, 907.8, 3104.5, 3104.9
	NFPA 13, Amended Sections as follows: ***Add a sentence to the beginning of Section 9.3.5.8.9 as follows:*** *Where 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.*	
13D-02	Installation of Sprinkler Systems in One- and Two-family Dwellings and Manufactured Homes	903.3.1.3, 903.3.5.1.1
13R-02	Installation of Sprinkler Systems in Residential Occupancies Up to and Including Four Stories in Height	903.3.1.2, 903.3.5.1.1, 903.3.5.1.2, 903.4
14-03	Installation of Standpipe and Hose System	905.2, 905.3.4, 905.4.2, 905.8
15-01	*Water Spray Fixed Systems for Fire Protection*	
16-03	Installation Foam-water Sprinkler and Foam-water Spray Systems	904.7, 904.11
17-02	Dry Chemical Extinguishing Systems	904.6, 904.11
17A-02	Wet Chemical Extinguishing Systems	904.5, 904.11
20-03	*Installation of Stationary Pumps for Fire Protection*	
22-03	*Water Tanks for Private Fire Protection*	
24-02	*Installation of Private Fire Service Mains and Their Appurtenances*	
30-03	Flammable and Combustible Liquids Code	415.3
31-01	Installation of Oil-burning Equipment	2113.15
32-*04*	Dry Cleaning Plants	415.6.4
37-02	*Installation and Use of Stationary Combustion Engines and Gas Turbines*	
40-01	Storage and Handling of Cellulose Nitrate Film.	409.1
50-01	*Bulk Oxygen Systems at Consumer Sites*	*1224.4.6.5*
52-06	*Compressed Natural Gas (CNG) Vehicular Fuel Systems Code*	
54-05	*National Fuel Gas Code*	
57-02	*Liquefied Natural Gas (LNG) Vehicular Fuel Systems Code*	
58-04	*Standard for the Storage and Handling of Liquefied Petroleum Gases*	
61-*02*	Prevention of Fires and Dust Explosions in Agricultural and Food Product Facilities	415.6.1
72-02	National Fire Alarm Code, *as amended**	901.6, 903.4.1, 904.3.5, 907.2, 907.2.1.1, 907.2.3.3, 907.2.3.5, 907.2.3.6.1, 907.2.6.3.3, 907.2.10, 907.2.10.4, 907.2.11.2, 907.2.11.3, 907.2.12.2.3, 907.2.12.3, 907.4, 907.5, 907.9.1, *907.9.1.4*, 907.9.2, *907.9.2.1*, 907.10, 907.10.1.4, 907.10.1.5, 907.10.2.1, 907.14, 907.16, 907.17, 911.1, *1007.9, 1114B.2.2*, 3006.5
	NFPA 72, Amended Sections as follows: **4.4.4.4 Wiring.** The installation of all wiring, cable and equipment shall be in accordance with the *California Electrical Code,* and specifically with Articles 760, 770 and 800, where applicable. Optical fiber cables shall be protected against mechanical injury in accordance with Article 760.	

NFPA—continued

5.12.4 The operable part of each manual fire alarm box shall not be less than 1.1 m (3 $^{1}/_{2}$ feet) and not more than 1.22 m (4 feet) above floor level.

5.12.8 Additional fire alarm boxes shall be provided so that the travel distance to the nearest fire alarm box shall not be in excess of 61 m (200 feet) measured horizontally on the same floor.

Exception: *When individual dwelling units are served by a single exit stairway, additional boxes at other than the ground floor may be omitted.*

6.4.2.2.2

Exception: *(4) Where the vertically run conductors are contained in a 2-hour-rated cable assembly, or enclosed (installed) in a 2-hour-rated enclosure or a listed circuit integrity (C.I.) cable, which meets or exceeds a 2-hour fire-resistive rating.*

6.8.5.4.1 (2) A smoke detector that is continuously subjected to a smoke concentration above alarm threshold does not delay the system within functions of 4.4.3, 6.8.1.1 or 6.15.2.1 by more than *30 seconds.*

6.8.5.4.1 (5) *Operation of a patient room smoke detector in Group I-1 and I-2 occupancies shall not include an alarm verification feature.*

7.4.1.2 The total sound pressure level produced by combining the ambient sound pressure level with all audible notification appliances operating shall not exceed *110* dBA anywhere in the occupiable area.

7.4.3.1 Audible notification appliances intended for operation in the private mode shall have a sound level of not less than 45 dBA at (3 m) 10 feet or more than *110* dBA at the minimum hearing distance from the audible appliance.

11.7.2.1 *The alarm verification feature shall not be used for household fire warning equipment.*

11.7.5.7.1 *The alarm verification feature shall not be used for household fire warning equipment.*

80-99	Fire Doors and Fire Windows	508.2.2.1, 715.4, 715.4.5, 715.4.6.1, 715.4.7.2, 715.5, 1008.1.3.3
85-04	Boiler and Combustion System Hazards Code (Note: NFPA 8503 has been incorporated into NFPA 85)	415.6.1
92A-00	*Recommended Practice for Smoke-Control Systems*	
92B-05	Smoke Management Systems in Malls, Atria and Large Spaces	909.8
99-05	*Health Care Facilities*	*1224.4.6.2, 1224.4.6.3, 1224.4.6.4*
101-*06*	Life Safety Code	1025.6.2
105-03	Standard for the Installation of Smoke Door Assemblies	405.4.2, 715.4.3.1, 909.20.4.1
110-*05*	Emergency and Standby Power Systems	2702.1
111-*05*	Stored Electrical Energy Emergency and Standby Power Systems	2702.1
120-*04*	Coal Preparation Plants	415.6.1
211-03	Chimneys, Fireplaces, Vents and Solid Fuel-burning Appliances	2112.5
230-03	Standard for the Fire Protection of Storage	507.3
252-03	Standard Methods of Fire Tests of Door Assemblies	715.3, 715.4.1, 715.4.2, 715.4.3, 715.4.4.1
253-*06*	Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source	402.11.1, 406.6.4, 804.2, 804.3
257-00	Standard for Fire Test for Window and Glass Block Assemblies	715.3, 715.4.3.2, 715.5, 715.5.1, 715.5.2, 715.5.8.1
259-*03*	Test Method for Potential Heat of Building Materials	2603.4.1.10, 2603.5.3
265-02	Method of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Wall Coverings on Full Height Panels and Walls	803.6.2, 803.6.2.1
268-01	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
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	402.15.4, 803.2, 803.2.1, 803.5, 803.6.3, 2603.4, 2603.9
288-01	Standard Methods of Fire Tests of Floor Fire Door Assemblies in Fire-resistance-rated Floor Systems	711.8, 712.4.1.5
303-*06*	Fire Protection Standards for Marinas and Boatyards	905.3.7
409-*04*	Aircraft Hangars	412.2.6, 412.4.5
418-01	Standard for Heliports	412.5.5
484-02	*Combustible Metals, Metal Powders and Metal Rust*	
651-98	Machining and Finishing of Aluminum and the Production and Handling of Aluminum Powders	415.6.1
654-*06*	Prevention of Fire & Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids	415.6.1
655-01	Prevention of Sulfur Fires and Explosions	415.6.1
664-02	Prevention of Fires Explosions in Wood Processing and Woodworking Facilities	415.6.1
701-*04*	Standard Methods of Fire Tests for Flame-propagation of Textiles and Films	402.11.1, 410.3.6, 801.1.2, 806.1, 806.1.2, 806.2, 3102.3, 3102.3.1, 3102.6.1.1, 3105.4
704-01	Standard System for the Identification of the Hazards of Materials for Emergency Response	414.7.2, 415.2
1124-*06*	Manufacture, Transportation, and Storage of Fireworks and Pyrotechnic Articles	415.3.1
2001-04	Clean Agent Fire Extinguishing Systems	904.1

APPENDIX CHAPTER 1
ADMINISTRATION

Appendix Chapter 1 is not adopted by:

· California Building Standards Commission

· Housing and Community Development

· Office of the State Fire Marshal

Except where specifically indicated by an agency banner or matrix.

SECTION 101
GENERAL

101.1 Title. These regulations shall be known as the *California Building Code of the State of California,* hereinafter referred to as "this code."

101.2 Scope. The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, used and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures.

Exception: Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories above grade plane in height with a separate means of egress and their accessory structures shall comply with the *California Building Code.*

101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted

101.3 Intent. The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, mens of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to firefighters and emergency responders during emergency operations.

101.4 Referenced codes. The other codes listed in Appendix Chapter 1, Sections 101.4.1 through 101.4.7 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

101.4.1 Electrical. The provisions of the *California Electrical Code* shall apply to the installation of electrical systems, including alterations, repairs, replacement, equipment, appliances, fixtures, fittings and appurtenances thereto.

101.4.2 Gas. The provisions of the *California Plumbing Code* shall apply to the installation of gas piping from the point of delivery, gas appliances and related accessories as covered in this code. These requirements apply to gas piping systems extending from the point of delivery to the inlet connections of appliances and the installation and operation of residential and commercial gas appliances and related accessories.

101.4.3 Mechanical. The provisions of the *California Mechanical Code* shall apply to the installation, alterations, repairs and replacement of mechanical systems, including equipment, appliances, fixtures, fittings and/or appurtenances, including ventilating, heating, cooling, air-conditioning and refrigeration systems, incinerators and other energy-related systems.

101.4.4 Plumbing. The provisions of the *California Plumbing Code* shall apply to the installation, alteration, repair and replacement of plumbing systems, including equipment, appliances, fixtures, fittings and appurtenances, and where connected to a water or sewage system and all aspects of a medical gas system. The provisions of the *California Plumbing Code* shall apply to private sewage disposal systems.

101.4.5 Property maintenance . The provisions of the *California Building Code* shall apply to existing structures and premises; equipment and facilities; light, ventilation, space heating, sanitation, life and fire safety hazards; responsibilities of owners, operators and occupants; and occupancy of existing premises and structures.

101.4.6 Fire prevention. The provisions of the *California Fire Code* shall apply to matters affecting or relating to structures, processes and premises from the hazard of fire and explosion arising from the storage, handling or use of structures, materials or devices; from conditions hazardous to life, property or public welfare in the occupancy of structures or premises; and from the construction, extension, repair, alteration or removal of fire suppression and alarm systems or fire hazards in the structure or on the premises from occupancy or operation.

101.4.7 Energy. The provisions of the *California Energy Code, Title 24, Part 6* shall apply to all matters governing the design and construction of buildings for energy efficiency.

Exception: [OSHPD 1, 2 & 4] *Not required by OSHPD.*

SECTION 102
APPLICABILITY

102.1 General. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable.

102.1.1 Additional requirements. [OSHPD 1, 2, 3, & 4] *See Chapter 1, Section 101.7.*

102.2 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

102.3 Application of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

102.4 Referenced codes and standards. The codes and standards referenced in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

102.5 Partial invalidity. In the event that any part or provision of this code is held to be illegal or void, this shall not have the effect of making void or illegal any of the other parts or provisions.

102.6 Existing structures. The legal occupancy of any structure existing on the date of adoption of this code shall be permitted to continue without change, except as is specifically covered in this code, the *California Building Code* or the *California Fire Code* , or as is deemed necessary by the building official for the general safety and welfare of the occupants and the public.

SECTION 103
DEPARTMENT OF BUILDING SAFETY

103.1 Creation of enforcement agency. The Department of Building Safety is hereby created and the official in charge thereof shall be known as the building official.

103.2 Appointment. The building official shall be appointed by the chief appointing authority of the jurisdiction.

103.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the building official shall have the authority to appoint a deputy building official, the related technical officers, inspectors, plan examiners and other employees. Such employees shall have powers as delegated by the building official. For the maintenance of existing properties, see the *California Building Code*.

SECTION 104
DUTIES AND POWERS OF BUILDING OFFICIAL

104.1 General. The building official is hereby authorized and directed to enforce the provisions of this code. The building official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.

104.2 Applications and permits. The building official shall receive applications, review construction documents and issue permits for the erection, and alteration, demolition and moving of buildings and structures, inspect the premises for which such permits have been issued and enforce compliance with the provisions of this code.

104.3 Notices and orders. The building official shall issue all necessary notices or orders to ensure compliance with this code.

104.4 Inspections. The building official shall make all of the required inspections, or the building official shall have the authority to accept reports of inspection by approved agencies or individuals. Reports of such inspections shall be in writing and be certified by a responsible officer of such approved agency or by the responsible individual. The building official is authorized to engage such expert opinion as deemed necessary to report upon unusual technical issues that arise, subject to the approval of the appointing authority.

104.5 Identification. The building official shall carry proper identification when inspecting structures or premises in the performance of duties under this code.

104.6 Right of entry. Where it is necessary to make an inspection to enforce the provisions of this code, or where the building official has reasonable cause to believe that there exists in a structure or upon a premises a condition which is contrary to or in violation of this code which makes the structure or premises unsafe, dangerous or hazardous, the building official is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by this code, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the building official shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry. If entry is refused, the building official shall have recourse to the remedies provided by law to secure entry.

104.7 Department records. The building official shall keep official records of applications received, permits and certificates issued, fees collected, reports of inspections, and notices and orders issued. Such records shall be retained in the official records for the period required for retention of public records.

104.8 Liability. The building official, member of the board of appeals or employee charged with the enforcement of this code, while acting for the jurisdiction in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Any suit instituted against an officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by legal representative of the jurisdiction until the final termination of the proceedings. The building official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

104.9 Approved materials and equipment. Materials, equipment and devices approved by the building official shall be constructed and installed in accordance with such approval.

HISTORY NOTE APPENDIX
CALIFORNIA BUILDING CODE

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

For prior history, see the History Note Appendix to the California Building Code, 2001 Triennial Edition effective November 1, 2002.

1. (BSC 01/06, BSC 06/06, DSA-AC 01/06, DSA-AC 02/06, DSA-SS 01/06, DSA-SS 02/06, HCD 04/06, OSHPD 02/06, OSHPD 03/06, OSHPD 04/06, SFM 05/06) Adoption by reference of the 2006 *International Building Code* with necessary state amendments and repeal of the 1997 edition of the *Uniform Building Code*. Filed with the Secretary of State on February 15, 2007 and effective on January 1, 2008.

2. Erratum to correct editorial errors in Chapter 1, Section 108.2.1.3. Chapter 1, Section 109.1.2.1. Chapter 2, Definitions - Matrix Adoption Table correction. Chapter 4, Section 430 - Article reference change. Chapter 5, Table 503. Chapter 5, Section 507.3. Chapter 11A, Section 1110A.2. Chapter 11A, Figure 11A-9D and 11A-9E out of order. Chapter 11A, Section 1121B.3.1 (8) (a), Chapter 11A, Section 1124A.3.2.1. Chapter 11A, Section 1143A.4. Chapter 11B, Section 1111B, 1115B.3, 1129B.4, 1133B.4.5.3, 1133B.7.1.3 and Figure 11B-11. Chapter 12, Matrix Adoption Table. Chapter 12, Section 1250.1 and 1250.4. Chapter 15, Section 1511.1. Chapter 16A, Section 1614A.1.13. Chapter 17A, Section 1714A.5.2. Chapter 18, Matrix Adoption Tables. Chapter 29, Fixture Table 2902.1. Chapter 31, Section 3109.4.4.2 through 3109.4.4.8. Chapter 31A - Clarify reference to Title 8 for provisions. Chapter 35, NFPA 13-02. Appendix Chapter 1, Section 101.4.2, 101.4.5, 102.6 and 103.3.