REVISION RECORD FOR THE STATE OF CALIFORNIA

ERRATA

January 1, 2014

2013 Title 24, Part 2.5, California Code of Regulations

General Information:

1. The date of this erratum is for identification purposes only. See the History Note Appendix on the back side or accompanying page.
2. This erratum is issued by the California Building Standards Commission in order to correct nonsubstantive printing errors or omissions in California Code of Regulations, Title 24, Part 2.5, of the 2013 *California Residential Code*. Instructions are provided below.
3. Health and Safety Code Section 18938.5 establishes that only building standards in effect at the time of the application for a building permit may be applied to the project plans and construction. This rule applies to both adoptions of building standards for Title 24 by the California Building Standards Commission, and local adoptions and ordinances imposing building standards. An erratum to Title 24 is a nonregulatory correction because of a printing error or omission that does not differ substantively from the official adoption by the California Building Standards Commission. Accordingly, the corrected code text provided by this erratum may be applied on and after the stated effective date.
4. You may wish to retain the superseded material with this revision record so that the prior wording of any section can be easily ascertained.

Title 24, Part 2.5

Remove Existing Pages	Insert Buff Colored Pages
iii and iv	iii and iv
xi and xii	xi and xii
79 and 80	79 and 80
115 and 116	115 and 116
	664.1 through 664.8
665 and 666	665 and 666

Item No. 5525S131

PREFACE

This document is Part 2.5 of 12 parts of the official triennial compilation and publication of the adoptions, amendments and repeal of administrative regulations to the *California Code of Regulations, Title 24,* also referred to as the *California Building Standards Code*. This part is known as the *California Residential Code*.

The *California Building Standards Code* is published in its entirety every three years by order of the California legislature, with supplements published in intervening years. The California legislature delegated authority to various state agencies, boards, commissions and departments to create building regulations to implement the State's statutes. These building regulations, or standards, have the same force of law, and take effect 180 days after their publication unless otherwise stipulated. The *California Building Standards Code* applies to occupancies in the State of California as annotated.

A city, county, or city and county may establish more restrictive building standards reasonably necessary because of local climatic, geological or topographical conditions. Findings of the local condition(s) and the adopted local building standard(s) must be filed with the California Building Standards Commission to become effective and may not be effective sooner than the effective date of this edition of the *California Building Standards Code*. Local building standards that were adopted and applicable to previous editions of the *California Building Standards Code* do not apply to this edition without appropriate adoption and the required filing.

Should you find publication (e.g., typographical) errors or inconsistencies in this code or wish to offer comments toward improving its format, please address your comments to:

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Sacramento, CA 95833–2936

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ACKNOWLEDGEMENTS

The 2013 *California Building Standards Code* (Code) was developed through the outstanding collaborative efforts of the Department of Housing and Community Development, the Division of State Architect, the Office of the State Fire Marshal, the Office of Statewide Health Planning and Development, the California Energy Commission, the California Department of Public Health, the California State Lands Commission, the Board of State and Community Corrections, and the California Building Standards Commission (Commission).

This collaborative effort included the assistance of the Commission's Code Advisory Committees and many other volunteers who worked tirelessly to assist the Commission in the production of this Code.

Governor Edmund G. Brown Jr.

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For questions on California state agency amendments, please refer to the contact list on the following page.

CALIFORNIA CODE OF REGULATIONS, TITLE 24

California Agency Information Contact List

Board of State and Community Corrections

www.bscc.ca.gov . . . . . .(916) 445-5073
Local Adult Jail Standards
Local Juvenile Facility Standards

California Building Standards Commission

www.bsc.ca.gov . . . . . .(916) 263-0916

California Energy Commission

www.energy.ca.gov . . . . . . ***Energy Hotline*** *(800) 772-3300*
Building Efficiency Standards
Appliance Efficiency Standards
Compliance Manual/Forms

California State Lands Commission

www.slc.ca.gov . . . . . .(562) 499-6312
Marine Oil Terminals

California State Library

www.library.ca.gov . . . . . .(916) 654-0266

Department of Consumer Affairs:

Acupuncture Board
www.acupuncture.ca.gov . . . . . .(916) 515-5200
Office Standards

Board of Pharmacy
www.pharmacy.ca.gov . . . . . .(916) 574-7900
Pharmacy Standards

Bureau of Barbering and Cosmetology
www.barbercosmo.ca.gov . . . . . .(916) 952-5210
Barber and Beauty Shop,
and College Standards

Bureau of Electronic and Appliance Repair,
Home Furnishings and Thermal Insulation
www.bearhfti.ca.gov. . . . . .(916) 999-2041
Insulation Testing Standards

Structural Pest Control Board
www.pestboard.ca.gov . . . . . .(800) 737-8188
Structural Standards

Veterinary Medical Board
www.vmb.ca.gov. . . . . .(916) 263-2610
Veterinary Hospital Standards

Department of Food and Agriculture

www.cdfa.ca.gov
Meat & Poultry Packing Plant Standards (916) 654-0509
Dairy Standards (916) 654-0773

Department of Housing and Community Development

www.hcd.ca.gov. . . . . .(916) 445-9471

Residential- Hotels, Motels, Apartments,
Single-Family Dwellings; and
Permanent Structures in Mobilehome &
Special Occupancy Parks

(916) 445-3338
Factory-Built Housing, Manufactured Housing &
Commercial Modular

Mobilehome- Permits & Inspections
Northern Region–(916) 255-2501
Southern Region–(951) 782-4420

(916) 445-9471
Employee Housing Standards

Department of Public Health

www.dph.ca.gov. . . . . .(916) 449-5661

Organized Camps Standards
Public Swimming Pools Standards

Division of the State Architect

www.dgs.ca.gov/dsa. . . . . .(916) 445-8100

Access Compliance

Structural Safety

Public Schools Standards
Essential Services Building Standards
Community College Standards

State Historical Building Safety Board

Alternative Building Standards

Office of Statewide Health Planning and Development

www.oshpd.ca.gov . . . . . .(916) 440-8356

Hospital Standards
Skilled Nursing Facility Standards &
Clinic Standards
Permits

Office of the State Fire Marshal

osfm.fire.ca.gov . . . . . .(916) 445-8200

Code Development and Analysis
Fire Safety Standards

R311.7.10.2 Bulkhead enclosure stairways. Stairways serving bulkhead enclosures, not part of the required building egress, providing access from the outside grade level to the basement shall be exempt from the requirements of Sections R311.3 and R311.7 where the maximum height from the basement finished floor level to grade adjacent to the stairway does not exceed 8 feet (2438 mm) and the grade level opening to the stairway is covered by a bulkhead enclosure with hinged doors or other approved means.

R311.8 Ramps.

R311.8.1 Maximum slope. Ramps shall have a maximum slope of 1 unit vertical in 12 units horizontal (8.3-percent slope).

Exception: Where it is technically infeasible to comply because of site constraints, ramps may have a maximum slope of one unit vertical in eight horizontal (12.5-percent slope).

R311.8.2 Landings required. A minimum 3-foot-by-3-foot (914 mm by 914 mm) landing shall be provided:

1. At the top and bottom of ramps.
2. Where doors open onto ramps.
3. Where ramps change direction.

R311.8.3 Handrails required. Handrails shall be provided on at least one side of all ramps exceeding a slope of one unit vertical in 12 units horizontal (8.33-percent slope).

R311.8.3.1 Height. Handrail height, measured above the finished surface of the ramp slope, shall be not less than 34 inches (864 mm) and not more than 38 inches (965 mm).

R311.8.3.2 Grip size. Handrails on ramps shall comply with Section R311.7.8.3.

R311.8.3.3 Continuity. Handrails where required on ramps shall be continuous for the full length of the ramp. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than $1^1/_2$ inches (38 mm) between the wall and the handrails.

SECTION R312
GUARDS AND WINDOW FALL PROTECTION

R312.1 Guards. Guards shall be provided in accordance with Sections R312.1.1 through R312.1.4.

R312.1.1 Where required. Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches (762 mm) measured vertically to the floor or grade below at any point within 36 inches (914 mm) horizontally to the edge of the open side. Insect screening shall not be considered as a guard.

R312.1.2 Height. Required guards at open-sided walking surfaces, including stairs, porches, balconies or landings, shall be not less than *42 inches (1067 mm)* high measured vertically above the adjacent walking surface, adjacent fixed seating or the line connecting the leading edges of the treads.

Exceptions:

1. Guards on the open sides of stairs shall have a height not less than 34 inches (864 mm) measured vertically from a line connecting the leading edges of the treads.
2. Where the top of the guard also serves as a handrail on the open sides of stairs, the top of the guard shall not be less than 34 inches (864 mm) and not more than 38 inches (965 mm) measured vertically from a line connecting the leading edges of the treads.

R312.1.3 Opening limitations. Required guards shall not have openings from the walking surface to the required guard height which allow passage of a sphere 4 inches (102 mm) in diameter.

Exceptions:

1. The triangular openings at the open side of stair, formed by the riser, tread and bottom rail of a guard, shall not allow passage of a sphere 6 inches (153 mm) in diameter.
2. Guards on the open side of stairs shall not have openings which allow passage of a sphere $4^3/_8$ inches (111 mm) in diameter.

R312.1.4 Exterior woodplastic composite guards. Woodplastic composite guards shall comply with the provisions of Section R317.4.

R312.2 Window fall protection. Window fall protection shall be provided in accordance with Sections R312.2.1 and R312.2.2.

R312.2.1 Window sills. In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (610 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4-inch-diameter (102 mm) sphere where such openings are located within 24 inches (610 mm) of the finished floor.

Exceptions:

1. Windows whose openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened position.
2. Openings that are provided with window fall prevention devices that comply with ASTM F 2090.
3. Windows that are provided with window opening control devices that comply with Section R312.2.2.

R312.2.2 Window opening control devices. Window opening control devices shall comply with ASTM F 2090. The window opening control device, after operation to release the control device allowing the window to fully

open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section R310.1.1.

SECTION R313
AUTOMATIC FIRE SPRINKLER SYSTEMS

R313.1 Townhouse automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in townhouses.

Exception: An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

R313.1.1 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section *R313.3 or NFPA 13D.*

R313.2 One- and two-family dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section *R313* or NFPA 13D.

***R313.3* Dwelling unit fire sprinkler systems.**

***R313.3.1* General.** The design and installation of residential fire sprinkler systems shall be in accordance with NFPA 13D or Section *R313.3*, which shall be considered equivalent to NFPA 13D. Partial residential sprinkler systems shall be permitted to be installed only in buildings not required to be equipped with a residential sprinkler system. Section *R313.3* shall apply to stand-alone and multipurpose wet-pipe sprinkler systems that do not include the use of antifreeze. A multipurpose fire sprinkler system shall supply domestic water to both fire sprinklers and plumbing fixtures. A stand-alone sprinkler system shall be separate and independent from the water distribution system. A backflow flow preventer shall not be required to separate a stand-alone sprinkler system from the water distribution system.

***R313.3.1.1* Required sprinkler locations.** Sprinklers shall be installed to protect all areas of a dwelling unit.

Exceptions:

1. Attics, crawl spaces and normally unoccupied concealed spaces that do not contain fuel-fired appliances do not require sprinklers. In attics, crawl spaces and normally unoccupied concealed spaces that contain fuel-fired equipment, a sprinkler shall be installed above the equipment; however, sprinklers shall not be required in the remainder of the space.
2. Clothes closets, linen closets and pantries not exceeding 24 square feet (2.2 m^2) in area, with the smallest dimension not greater than 3 feet (915 mm) and having wall and ceiling surfaces of gypsum board.
3. Bathrooms not more than 55 square feet (5.1m^2) in area.
4. Detached garages; carports with no habitable space above; open attached porches; unheated entry areas, such as mud rooms, that are adjacent to an exterior door; and similar areas.

***R313.3.2* Sprinklers.** Sprinklers shall be new listed residential sprinklers and shall be installed in accordance with the sprinkler manufacturer's installation instructions.

***R313.3.2.1* Temperature rating and separation from heat sources.** Except as provided for in Section *R313.3.2.2*, sprinklers shall have a temperature rating of not less than 135°F (57°C) and not more than 170°F (77°C). Sprinklers shall be separated from heat sources as required by the sprinkler manufacturer's installation instructions.

***R313.3.2.2* Intermediate temperature sprinklers.** Sprinklers shall have an intermediate temperature rating not less than 175°F (79°C) and not more than 225°F (107°C) where installed in the following locations: 1. Directly under skylights, where the sprinkler is exposed to direct sunlight. 2. In attics. 3. In concealed spaces located directly beneath a roof. 4. Within the distance to a heat source as specified in Table *R313.3.2.2.*

***R313.3.2.3* Freezing areas.** Piping shall be protected from freezing as required by the California Plumbing Code. Where sprinklers are required in areas that are subject to freezing, dry-sidewall or dry-pendent sprinklers extending from a nonfreezing area into a freezing area shall be installed. *Where fire sprinkler piping cannot be adequately protected against freezing, the system shall be designed and installed in accordance with NFPA 13D.*

***R313.3.2.4* Sprinkler coverage.** Sprinkler coverage requirements and sprinkler obstruction requirements shall be in accordance with Sections *R313.3.2.4.1* and *R313.3.2.4.2.*

***R313.3.2.4.1* Coverage area limit.** The area of coverage of a single sprinkler shall not exceed 400 square feet (37 m^2) and shall be based on the sprinkler listing and the sprinkler manufacturer's installation instructions.

***R313.3.2.4.2* Obstructions to coverage.** Sprinkler discharge shall not be blocked by obstructions unless additional sprinklers are installed to protect the obstructed area. Additional sprinklers shall not be required where the sprinkler separation from obstructions complies with either the minimum distance indicated in Figure *R313.3.2.4.2* or the minimum distances specified in the sprinkler manufacturer's instructions where the manufacturer's instructions permit a lesser distance.

SECTION R327.8
EXTERIOR WINDOWS AND DOORS

R327.8.1 General.

R327.8.2 Exterior glazing. *The following exterior glazing materials and/or assemblies shall comply with this section:*

1. *Exterior windows.*
2. *Exterior glazed doors.*
3. *Glazed openings within exterior doors.*
4. *Glazed openings within exterior garage doors.*
5. *Exterior structural glass veneer.*

R327.8.2.1 Exterior windows and exterior glazed door assembly requirements. *Exterior windows and exterior glazed door assemblies shall comply with one of the following requirements:*

1. *Be constructed of multipane glazing with a minimum of one tempered pane meeting the requirements of Section 2406 Safety Glazing, or*
2. *Be constructed of glass block units, or*
3. *Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or*
4. *Be tested to meet the performance requirements of SFM Standard 12-7A-2.*

R327.8.2.2 Structural glass veneer. *The wall assembly behind structural glass veneer shall comply with section R327.7.3.*

R327.8.3 Exterior doors. *Exterior doors shall comply with one of the following:*

1. *The exterior surface or cladding shall be of noncombustible or Ignition-resistant material, or*
2. *Shall be constructed of solid core wood that comply with the following requirements:*
   - *2.1. Stiles and rails shall not be less than $1^{3}/_{8}$ inches thick*
   - *2.2. Raised panels shall not be less than $1^{1}/_{4}$ inches thick, except for the exterior perimeter of the raised panel that may taper to a tongue not less than $^{3}/_{8}$ inch thick.*
3. *Shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.*
4. *Shall be tested to meet the performance requirements of SFM Standard 12-7A-1.*

R327.8.3.1 Exterior door glazing. *Glazing in exterior doors shall comply with Section 708A.2.1.*

SECTION R327.9
DECKING

R327.9.1 General. *The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section.*

R327.9.2 Where required. *The walking surface material of decks, porches, balconies and stairs shall comply with the requirements of this section when any portion of such surface is within 10 feet (3048 mm) of the building.*

R327.9.3 Decking surfaces. *The walking surface material of decks, porches, balconies and stairs shall be constructed with one of the following materials:*

1. *Ignition-resistant material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5.*
2. *Exterior fire retardant treated wood.*
3. *Noncombustible material.*
4. *Any material that complies with the performance requirements of SFM Standard 12-7A-4A when attached exterior wall covering is also either noncombustible or ignition-resistant material.*

   Exception: *Wall material may be of any material that otherwise complies with this chapter when the decking surface material complies with the performance requirements ASTM E 84 with a Class B flame spread rating.*

SECTION R327.10
ACCESSORY STRUCTURES

R327.10.1 General. *Accessory and miscellaneous structures, other than buildings covered by Section 701A.3, which pose a significant exterior exposure hazard to applicable buildings during wildfires shall be constructed to conform to the ignition resistance requirements of this section.*

R327.10.2 Applicability. *The provisions of this section shall apply to trellises, arbors, patio covers, carports, gazebos, and similar structures of an accessory or miscellaneous character.*

Exceptions:

1. *Decks shall comply with the requirements of Section 709A.*
2. *Awnings and canopies shall comply with the requirements of Section 3105.*

R327.10.3 Where required. *Accessory structures shall comply with the requirements of this section.*

R327.10.3.1 *Attached accessory structures shall comply with the requirements of this section.*

R327.10.3.2 *When required by the enforcing agency, detached accessory structures within 50 feet of an applicable building shall comply with the requirements of this section.*

R327.10.4. Requirements. *When required by the enforcing agency accessory structures shall be constructed of noncombustible or ignition-resistant materials.*

SECTION 328
ELECTRIC VEHICLE

R328.1 Electric vehicle. *An automotive-type vehicle for highway use, such as passenger automobiles, buses, trucks, vans and the like, primarily powered by an electric motor that draws current from a rechargeable storage battery, fuel cell, photovoltaic array or other source of electric current. For the purpose of this chapter, electric motorcycles and similar type vehicles and off-road self-propelled electric vehicles such as industrial trucks, hoists, lifts, transports, golf carts, airline ground support equipment, tractors, boats and the like, are not included*

R328.2 Charging. *In any building or interior area used for charging electric vehicles, electrical equipment shall be installed in accordance with the California Electrical Code.*

R328.3 Ventilation. *Mechanical exhaust ventilation, when required by the California Electrical Code shall be provided at a rate as required by Article 625 or as required by Section 1203 of the California Building Code whichever is greater. The ventilation system shall include both the supply and exhaust equipment and shall be permanently installed and located to intake supply air from the outdoors, and vent the exhaust directly to, the outdoors without conducting the exhaust air through other spaces within the building.*

Exception: *Positive pressure ventilation systems shall only be allowed in buildings or areas that have been designed and approved for that application.*

R328.4 Electrical interface. *The electrical supply circuit to electrically powered mechanical ventilation equipment shall be interlocked with the recharging equipment used to supply the vehicle(s) being charged, and shall remain energized during the entire charging cycle. Electric vehicle recharging equipment shall be marked or labeled in accordance with the California Electrical Code.*

Exceptions:

1. *Exhaust ventilation shall not be required in areas with an approved engineered ventilation system, which maintains a hydrogen gas concentration at less than 25 percent of the lower flammability limit.*
2. *Mechanical exhaust ventilation for hydrogen shall not be required where the charging equipment utilized is installed and listed for indoor charging of electric vehicles without ventilation.*

SECTION R330
POLLUTANT CONTROL

R330.1 Finish material pollutant control. *Finish materials including adhesives, sealants, caulks, paints and coatings, aerosol paints and coatings, carpet systems, carpet cushion, carpet adhesive, resilient flooring systems and composite wood products shall meet the volatile organic compound (VOC) emission limits in accordance with the California Green Building Standards Code, Chapter 4, Division 4.5.*

SECTION R331
SOLAR PHOTOVOLTAIC PANELS/MODULES

R331.1 Solar photovoltaic power systems. *Solar photovoltaic power systems shall be installed in accordance with Sections R331.2 through R331.5 and the California Electrical Code.*

Exception: *Detached, nonhabitable Group U structures including, but not limited to, parking shade structures, carports, solar trellises and similar structures shall not be subject to the requirements of this section.*

R331.2 Marking. *Marking is required on interior and exterior direct-current (DC) conduit, enclosures, raceways, cable assemblies, junction boxes, combiner boxes and disconnects.*

R331.2.1 Materials. *The materials used for marking shall be reflective, weather resistant and suitable for the environment. Marking as required in Sections R331.2.2 through R331.2.4 shall have all letters capitalized with a minimum height of $^{3}/_{8}$ inch (9.5 mm) white on red background.*

R331.2.2 Marking content. *The marking shall contain the words "WARNING: PHOTOVOLTAIC POWER SOURCE."*

R331.2.3 Main service disconnect. *The marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the disconnect is operated.*

R331.2.4 Location of marking. *Marking shall be placed on interior and exterior DC conduit, raceways, enclosures and cable assemblies every 10 feet (3048 mm), within 1 foot (305 mm) of turns or bends and within 1 foot (305 mm) above and below penetrations of roof/ceiling assemblies, walls or barriers.*

R331.3 Locations of DC conductors. *Conduit, wiring systems and raceways for photovoltaic circuits shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize ventilation opportunities. Conduit runs between sub arrays and to DC combiner boxes shall be installed in a manner that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes shall be located such that conduit runs are minimized in the pathways between arrays. DC wiring shall be installed in metallic conduit or raceways when located within enclosed spaces in a building. Conduit shall run along the bottom of load bearing members.*

CALIFORNIA RESIDENTIAL CODE – MATRIX ADOPTION TABLE
APPENDIX R – AREAS PROTECTED BY THE FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN

Adopting Agency	BSC	SFM	HCD			DSA		OSHPD				CSA	DPH	AGR	DWR	CEC	CA	SL	SLC
			1	2	1-AC	AC	SS	1	2	3	4								
Adopt Entire Chapter															X				
Adopt Entire Chapter as amended (amended sections listed below)																			
Adopt only those sections that are listed below																			
Chapter/Section																			

APPENDIX R

AREAS PROTECTED BY THE FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN

Note: The effective date of these standards shall be March 1, 2012 or ninety (90) days after the corresponding maps are completed and readily available to the general public, whichever is the later date.

Table R301.2(1) Revise as follows:

Replace the Flood Hazards cell in table as follows:

FLOOD HAZARDS	
NFIP[g]	CVFPP[j]

j. Jurisdictions with Areas Protected by the Facilities of the Central Valley where Flood Levels are Anticipated to Exceed Three Feet for the 200-Year Flood Event, as defined in Section AR102, shall fill in this part of the table with "Yes" or "No".

AR101 General. *The provisions of this section shall apply to new construction, changes of use or repair and to substantial improvement and restoration of substantial damage of buildings in areas protected by the facilities of the Central Valley Flood Protection Plan, as established in Table R301.2(1), where flood levels are anticipated to exceed three feet for the 200-year flood event. Except as specifically required by this section, buildings and structures shall meet applicable provisions of this code.*

> ***AR101.1 Construction documents.*** *Construction documents shall include the WSEL200 and the elevation(s) of the floor(s), and, as applicable, the elevation(s) and slopes of roofs, of the building or structure.*

AR102 Definitions.

The following words and terms shall, for the purposes of this section, have the meanings shown.

AREAS PROTECTED BY THE FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN WHERE FLOOD LEVELS ARE ANTICIPATED TO EXCEED THREE FEET FOR THE 200-YEAR FLOOD EVENT. *Geographical areas identified by the state as "Areas Protected by the Facilities of the Central Valley Flood Protection Plan where Flood Levels are Anticipated to Exceed Three Feet for the 200-Year Flood Event" in accordance with the Health and Safety Code Section 50465. Published data from the California Department of Water Resources can be obtained online at the following website: www.water.ca.gov/BuildingCodes.*

> ***Note:*** *The facilities of the Central Valley Flood Protection Plan are identified in the following counties: Butte, Colusa, Fresno, Glenn, Lake, Madera, Merced, Plumas, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, Tehama, Yolo and Yuba. Determination of additional facilities is ongoing.*

CENTRAL VALLEY. *Any lands in the bed or along or near the banks of the Sacramento River and the San Joaquin River, and any of their tributaries or connected therewith, or upon any land adjacent thereto, or within any of the overflow basins thereof, or upon any land susceptible to overflow therefrom. The following counties and the incorporated municipalities within these counties, in whole or in part, are in the Central Valley: Alpine, Amador, Butte, Calaveras, Colusa, El Dorado, Fresno, Glenn, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Joaquin, Shasta, Sierra, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tuolumne, Yolo and Yuba. A map that delineates the Central Valley can be obtained online at the following website: www.water.ca.gov/BuildingCodes.*

EVACUATION LOCATION. *A location no less than one (1) foot (0.30 meter) above the WSEL200 where occupants are expected to congregate pending evacuation and from which occupants may be evacuated during conditions of flooding, such as a space within the building that has an exit door or operable window; a deck, balcony, porch, rooftop platform or rooftop area; or combinations thereof.*

FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN. *The facilities referenced herein include the facilities of State Plan of Flood Control and other flood management facilities in the Central Valley evaluated under the Central Valley Flood Protection Plan, which will be completed in 2012 and updated every 5 years thereafter. The facilities of State Plan of Flood Control include the state and federal flood control works (levees, weirs, channels, and other features) of the Sacramento River Flood Control Project described in Water Code Section 8350, and flood control projects in the Sacramento River and San Joaquin River watersheds authorized pursuant to Article 2 (commencing with Water Code section 12648) of Chapter 2 of Part 6 of Division 6 for which the Central Valley Flood Protection Board or the Department of Water Resources has provided the assurances of nonfederal cooperation to the United States, and those facilities identified in Water Code Section 8361.*

ROUTE TO THE EVACUATION LOCATION. *The path through and along which occupants move from the habitable areas of a building or structure that are below the WSEL200 to the evacuation location.*

SUBSTANTIAL DAMAGE. *Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.*

SUBSTANTIAL IMPROVEMENT. *Any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the improvement or repair is started. If the structure has sustained damage, any repairs are considered substantial improvement regardless of*

the actual repair work performed. The term does not, however, include either:

1. *Any project for improvement of a building required to correct existing health, sanitary or safety code violations identified by the building official and that area the minimum necessary to assure safe living conditions.*
2. *Any alteration of a historic structure provided that the alteration will not preclude the structure's continued designation as a historic structure.*

WSEL200. *The water surface elevation (WSEL) of the 200-year flood event that is identified by the state when it identifies areas that receive protection from the facilities of the Central Valley Flood Protection Plan.*

AR103 Structural stability. *Portions of buildings and structures that support evacuation locations shall be designed, constructed, connected and anchored to resist flotation, collapse or permanent lateral movement resulting from the hydrostatic loads anticipated during conditions of flooding anticipated for the 200-year flood event.*

Exception: *When one flood vent (minimum) is provided on two opposite sides of the building or structure that comply with Figure AR103.*

AR103.1 Determination of loads. *Hydrostatic loads, based on the depth of water determined by the WSEL200 shall be determined in accordance with Chapter 5 of ASCE 7. Reduction of hydrostatic loads may be accomplished by allowing for the automatic entry and exit of floodwaters to minimize unbalanced loads. Such means shall be designed by a registered design professional and include, but are not limited to, openings, valves, and panels designed to yield under load.*

AR104 Evacuation Locations. *An evacuation location and a route to the evacuation location shall be provided.*

AR104.1 Route to evacuation location. *A route shall be allowed through any number of intervening rooms or spaces. Doors along the route shall be openable without the use of a key, lock, special knowledge or effort.*

AR104.2 minimum size requirements. *Evacuation locations shall provide a minimum gross floor area of 7 square feet (0.65 m^2) per occupant, based on the occupant load of the portions of the building that are below WSEL200. The area provided shall be adequate to accommodate the occupant load of the upper levels as well as the anticipated occupant load from the area below the WSEL200.*

AR105 Space within the building. *If the evacuation location is a space within a building, the evacuation location shall be provided with a means for occupants to be evacuated out of the building specified in Section AR105.1, R105.2 or R105.3. The means for occupants to be evacuated out of the building shall address the mobility of the occupants.*

AR105.1 Windows, minimum size and dimensions. *A minimum of one window shall be provided that meet the minimum size, minimum dimensions and operational constraints of Section R310. The number of such windows shall be appropriate for the occupancy or occupancies of the portions of the building that are below WSEL200.*

Note: *It is the intent of this section that windows be of sufficient number, sizes and dimensions to reasonably accommodate the needs and limitations of the occupants of the building. Reasonable judgment in the application of this requirement must be exercised by the building official.*

AR105.2 Exterior doors to decks, balconies and porches. *Exterior doors to decks, balconies and porches shall be sized in accordance with Section R311.*

AR105.3 Means of escape to rooftops from spaces within a building. *The means of escape to rooftops shall be permitted to be provided by a stairway, ramp, alternating tread device, fixed ladder or other means approved by the building official.*

AR106 Decks and balconies that are evacuation locations. *Decks and balconies that have finish floors no less than one (1) foot (0.30 meter) above the WSEL200 shall be permitted to be evacuation locations. When a deck or balcony used as an evacuation location is not at the same level as a floor within the building, it shall be permitted to be accessed by a stairway, ramp, alternating tread device, fixed ladder or other means approved by the building official.*

AR106.1 Live load. *Decks and balconies that are evacuation locations shall be designed for the live load required in Table R301.5.*

AR106.2 Evacuation route. *Evacuation routes to decks and balconies that are evacuation locations shall be permitted to be provided by a stairway, ramp, alternating tread device, fixed ladder or other means approved by the building official.*

AR107 Rooftop evacuation locations. *Rooftop evacuation locations shall be permitted to include rooftop platforms and rooftop areas provided that they are no less than one (1) foot (0.30 meter) above the WSEL200. A minimum horizontal distance of 3 feet (0.91 meter) shall be provided between the lower edge of the rooftop evacuation location access point and the evacuation location lower perimeter.*

AR107.1 Rooftop platforms required. *A rooftop platform shall be provided if the roof covering materials are:*

1. *Clay tile, concrete tile, slate shingles, wood shingles or wood shakes, and the roof slope is three units vertical in 12 units horizontal (25 percent slope) or greater.*
2. *Metal roof panels or metal roof shingles, and the roof slope is one unit vertical in 12 units horizontal (8.33 percent slope) or greater.*

AR107.2 Roof live loads. *Roof areas that are rooftop evacuation locations and roofs that support rooftop platforms that are evacuation locations shall be designed for the roof live load required for the occupancy as required in CBC Table 1607.2.*

AR107.3 Evacuation routes to rooftop evacuation locations. *Evacuation routes to rooftop evacuation locations shall be permitted to be provided by a stairway, ramp, alternating tread device, fixed ladder or other means approved by the building official.*

AR107.4 Perimeter protection. *The perimeter of rooftop evacuation locations shall be protected by:*

1. *Guards per Section R312 if a rooftop platform is provided; or*
2. *A railing that is 12 inches (305 mm) in height if a sloped roof is provided.*

AR107.5 Utility/equipment buffer zone. *A separation of 48 inches shall be provided between an evacuation location and any mechanical equipment, photovoltaic system, utility service drop or other utility line. Electrical service lines shall not pass over evacuation locations.*

AR108 Attics that are evacuation locations. *Attics that have finish floors no less than one (1) foot above the WSEL200 shall be permitted to be evacuation locations.*

AR108.1 Headroom. *When an attic is used as an evacuation location, the minimum headroom of the required area shall be 30 inches (762 mm) with 50 percent of the required area having a headroom of 60 inches (1524 mm).*

AR108.2 Attic flooring. *The required area of the evacuation location shall be solidly sheathed.*

AR108.3 Attic live loads. *Attic areas that are used as evacuation locations shall be designed for the attic with limited live load requirement in Table R301.5.*

AR108.4 Evacuation routes to attic evacuation locations. *In Group R-3.1 occupancies that are subject to the requirements of Chapter 11A or 11B, such requirements shall apply to the evacuation routes to attics. In Group R-3 occupancies, evacuation routes to attic evacuation locations shall be permitted to be provided by a stairway, ramp, alternating tread device, fixed ladder or other means approved by the building official.*

AR108.5 Means of escape from attics. *The means of escape from attics shall comply with Section AR105.*

AR109 Alternate means of protection.

AR109.1 Request for approval of alternate means of protection. *Requests for approval to use an alternative means of protection shall be made in writing to the building official by the owner or the owner's authorized representative. The request shall be accompanied by a full statement of the conditions and sufficient evidence that the proposed alternate means of protection provides reasonable protection to occupants. The building official shall require the owner to obtain a written statement from the applicable emergency management authority regarding plans and processes related to notification of anticipated conditions of flooding, warnings, evacuations and other pertinent conditions relative to the proximity of nearby levees. The building official shall also require the owner to obtain a written statement and findings from the entity that has jurisdiction over the management, maintenance, monitoring and control of flood protection works in the vicinity of the location of the owner's property, such statement shall comment on the viability of the proposed alternate means of protection. The building official may request written statements from the Central Valley Flood Protection Board, the California Department of Water Resources and the California Emergency Management Agency.*

Approval of a request for use of an alternative means of protection made pursuant to these provisions shall be limited to the particular case covered by the request and shall not be construed as establishing any precedent for any future request except in substantially equivalent situations.

Note: *Contact information for the California Department of Water Resources and the Department's Directory of Flood Officials, which includes levee and reclamation district boundary maps, is available on-line at the following website: www.water.ca.gov/BuildingCodes. The Department of Water Resources Building Code Project Engineer can be contacted at 916-574-1451. The Central Valley Flood Control Board Chief Engineer can be contacted at 916-574-0609. The California Emergency Management Agency Inland Region Program Manager can be contacted at 916-845-8488.*

AR109.2 Appeals. *When a request for an alternate means of protection has been denied by the building official, the applicant may file a written appeal with the board of appeals. In considering such appeal, the board of appeals may provide additional information to, and request additional written statements from the Central Valley Flood Protection Board, the California Department of Water Resources and the California Emergency Management Agency. If such additional written statements are provided, the board of appeals shall consider those statements.*

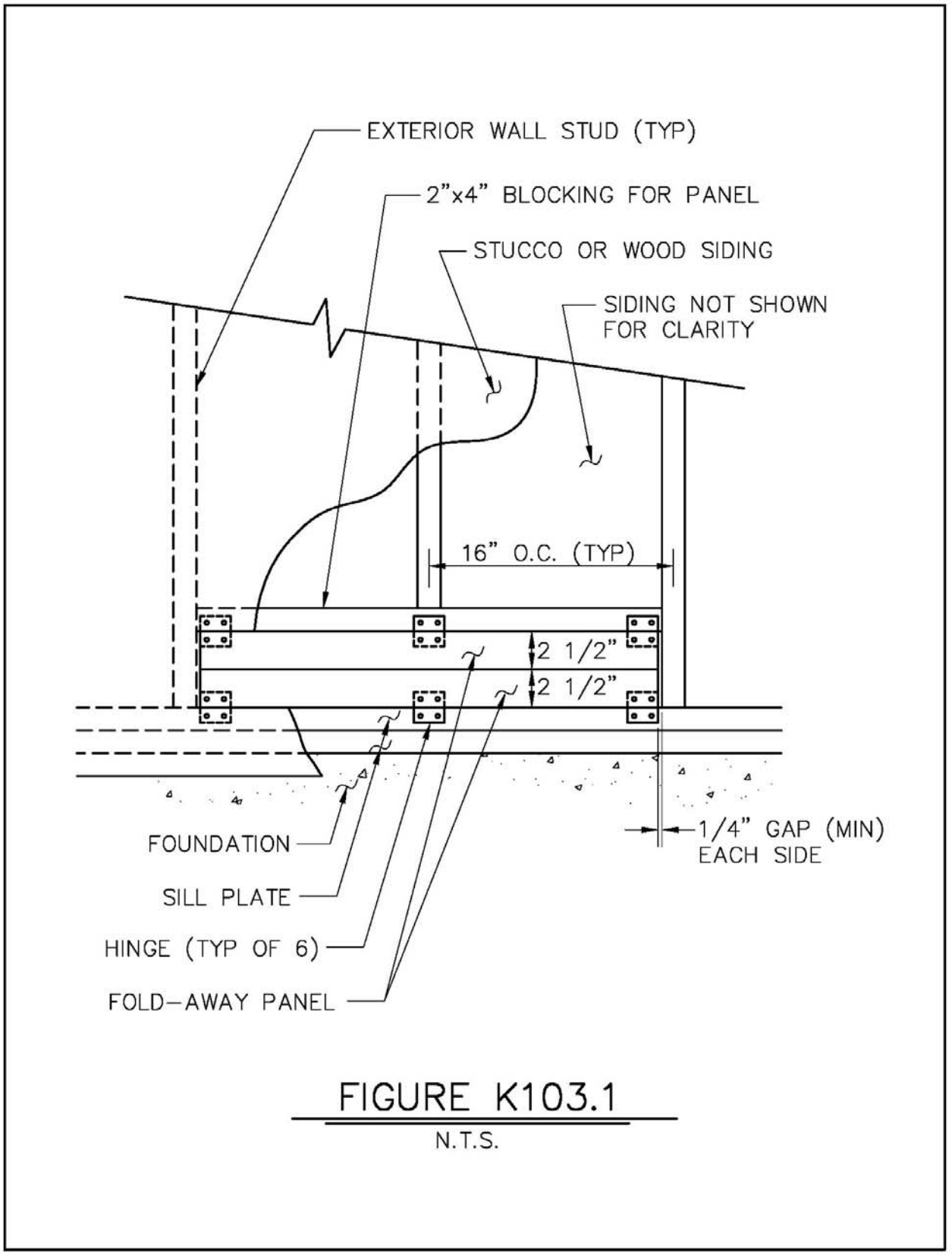

FIGURE K103.1

N.T.S.

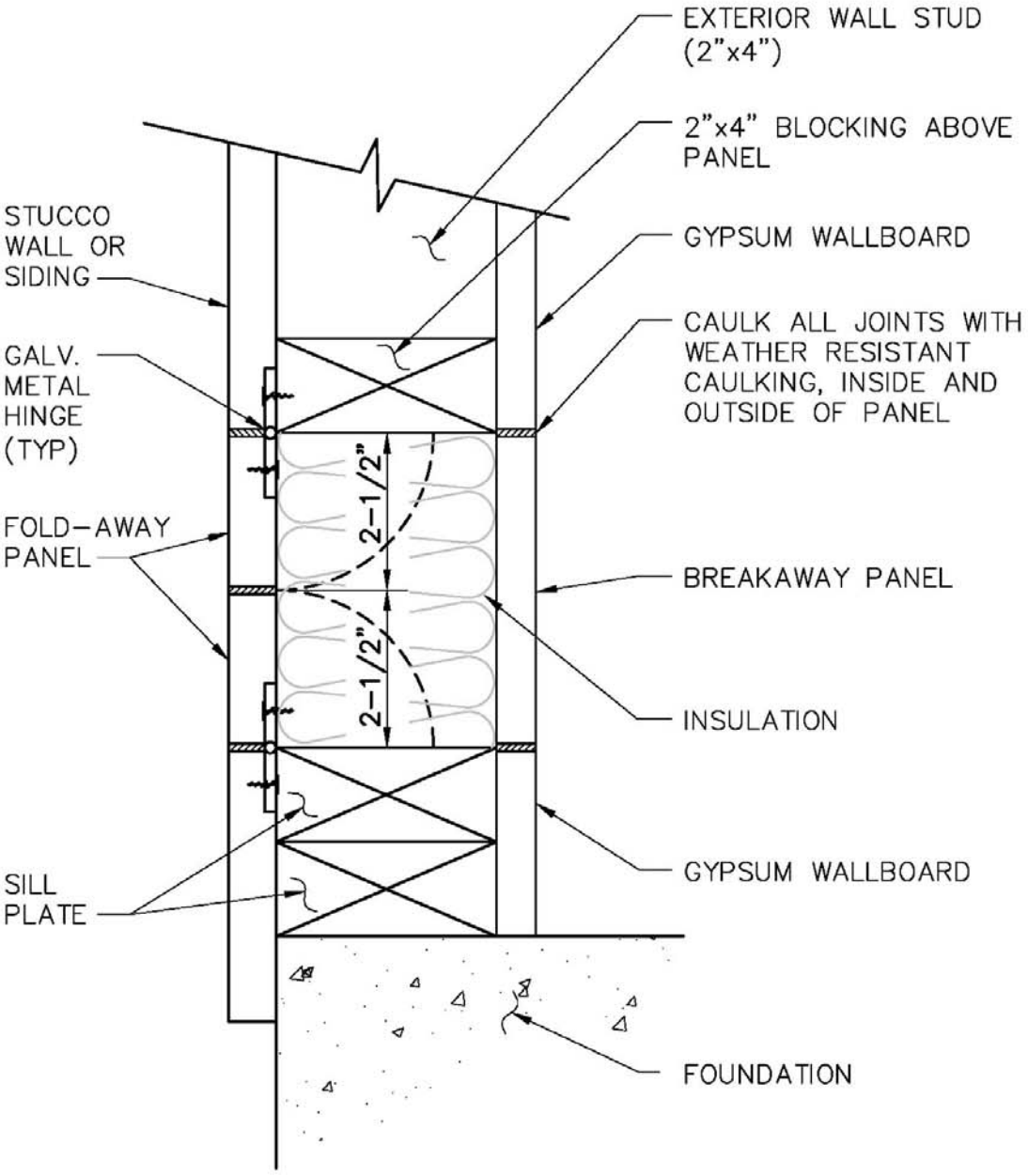

FIGURE K103.1

N.T.S.

HISTORY NOTE APPENDIX

California Residential Code
Title 24, Part 2.5, California Code of Regulations (CCR)

1. For prior code history, see the History Note Appendix to the *California Residential Code* (*CRC*), 2010 Triennial Edition effective January 1, 2011.
2. HCD 03/12, adoption by reference of the 2012 *International Residential Code* with necessary state amendments in the edition of the *2013 California Residential Code.* Effective date January 1, 2014 for provisions of HCD and SFM (4-12).
3. Errata to correct editorial errors within the preface and Chapter 3 as well as Appendix R of this code. Effective January 1, 2014.

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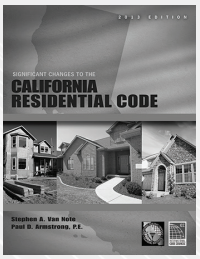

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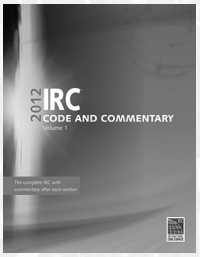

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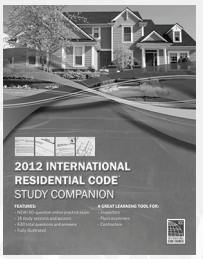

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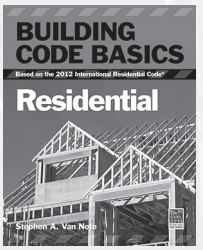

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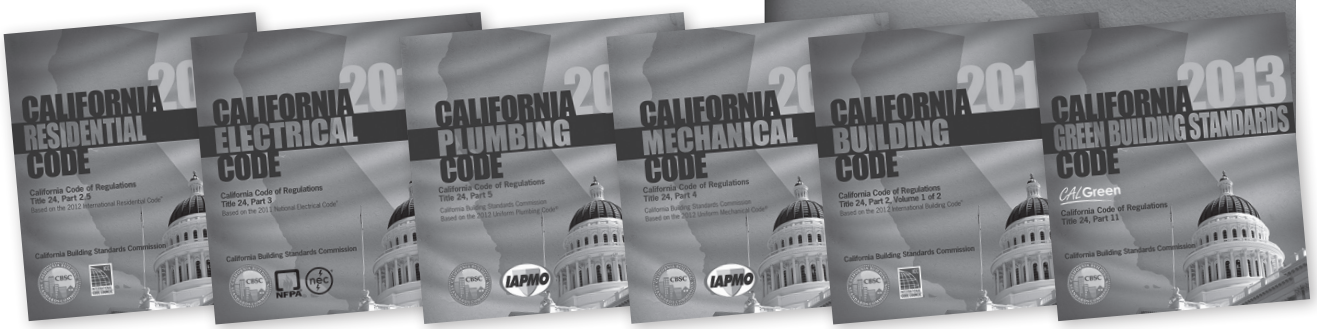

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