

**SECTION 4.101
GENERAL**

4.101.1 Scope. The provisions of this division outline planning, design and development methods that include environmentally responsible site selection, building design, building siting and development to protect, restore and enhance the environmental quality of the site and respect the integrity of adjacent properties.

**SECTION 4.102
DEFINITIONS**

4.102.1 Definitions. The following terms are defined in Chapter 2.

FRENCH DRAIN.

WATTLES.

**SECTION 4.103
SITE SELECTION
(Reserved)**

**SECTION 4.104
SITE PRESERVATION
(Reserved)**

**SECTION 4.105
DECONSTRUCTION AND REUSE
OF EXISTING STRUCTURES
(Reserved)**

**SECTION 4.106
SITE DEVELOPMENT**

4.106.1 General. Preservation and use of available natural resources shall be accomplished through evaluation and careful planning to minimize negative effects on the site and adjacent areas. Preservation of slopes, management of storm water drainage and erosion controls shall comply with this section.

4.106.2 Storm water drainage and retention during construction. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction. In order to manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site.

4.106.2.1 Retention basins of sufficient size shall be utilized to retain storm water on the site.

4.106.2.2 Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

4.106.2.3 Compliance with a lawfully enacted storm water management ordinance.

4.106.3 Grading and paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

4.106.3.1 Retention basins of sufficient size shall be utilized to retain storm water on the site.

4.106.3.2 Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

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4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

4.106.3.5 Retention basins of sufficient size shall be utilized to retain storm water on the site.

4.106.3.6 Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

4.106.3.7 Compliance with a lawfully enacted storm water management ordinance.

4.106.3.8 Grading and paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

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3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

4.106.3.9 Retention basins of sufficient size shall be utilized to retain storm water on the site.

4.106.3.10 Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

4.106.3.11 Compliance with a lawfully enacted storm water management ordinance.

4.106.3.12 Grading and paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

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4.106.3.13 Retention basins of sufficient size shall be utilized to retain storm water on the site.

4.106.3.14 Where storm water is conveyed to a public drainage system, collection point, gutter or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.

4.106.3.15 Compliance with a lawfully enacted storm water management ordinance.

4.106.3.16 Grading and paving. Construction plans shall indicate how the site grading or drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales
2. Water collection and disposal systems
3. French drains
4. Water retention gardens
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

4.106.4.2.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 EV spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).
 - a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.2.3 Single EV space required. Install a listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or enclosure in close proximity to the proposed location of the EV space. Construction documents shall identify the raceway termination point. The service panel and/or subpanel shall provide capacity to install a 40-ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit over-current protective device.

4.106.4.2.4 Multiple EV spaces required. Construction documents shall indicate the raceway termination point and proposed location of future EV spaces and EV chargers. Construction documents shall also provide information on amperage of future EVSE, raceway method(s), wiring schematics and electrical load calculations to verify that the electrical panel service capacity and electrical system, including any on-site distribution transformer(s), have sufficient capacity to simultaneously charge all EVs at all required EV spaces at the full rated amperage of the EVSE. Plan design shall be based upon a 40-ampere minimum branch circuit. Required raceways and related components that are planned to be installed underground, enclosed, inaccessible or in concealed areas and spaces shall be installed at the time of original construction.

4.106.4.2.5 Identification. The service panel or sub-panel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging purposes as "EV CAPABLE" in accordance with the *California Electrical Code*.

Notes:

1. The California Department of Transportation adopts and publishes the "California Manual on Uniform Traffic Control Devices (California MUTCD)" to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives Number 13-01. Website: <http://www.dot.ca.gov/trafficops/policy/13-01.pdf>
2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.
3. The Governor's Office of Planning and Research (OPR) published a "Zero-Emission Vehicle Community Readiness Guidebook" which provides helpful information for local governments, residents and businesses. Website: http://opr.ca.gov/docs/ZEV_Guidebook.pdf

4.106.4.3 New hotels and motels. All newly constructed hotels and motels shall provide EV spaces capable of supporting future installation of EVSE. The construction documents shall identify the location of the EV spaces.

Notes:

1. Construction documents are intended to demonstrate the project's capability and capacity for facilitating future EV charging.
2. There is no requirement for EV spaces to be constructed or available until EV chargers are installed for use.

4.106.4.3.1 Number of required EV spaces. The number of required EV spaces shall be based on the total number of parking spaces provided for all types of parking facilities in accordance with Table 4.106.4.3.1. Calculations for the required number of EV spaces shall be rounded up to the nearest whole number.

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED EV SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total

4.106.4.3.2 Electric vehicle charging space (EV space) dimensions. The EV spaces shall be designed to comply with the following:

1. The minimum length of each EV space shall be 18 feet (5486 mm).
2. The minimum width of each EV space shall be 9 feet (2743 mm).
3. One in every 25 EV spaces, but not less than one, shall also have an 8-foot (2438 mm) wide minimum aisle. A 5-foot (1524 mm) wide minimum aisle shall be permitted provided the minimum width of the EV space is 12 feet (3658 mm).
 - a. Surface slope for this EV space and the aisle shall not exceed 1 unit vertical in 48 units horizontal (2.083 percent slope) in any direction.

4.106.4.3.3 Single EV space required. When a single EV space is required, the EV space shall be designed in accordance with Section 4.106.4.2.3.

4.106.4.3.4 Multiple EV spaces required. When multiple EV spaces are required, the EV spaces shall be designed in accordance with Section 4.106.4.2.4.

4.106.4.3.5 Identification. The service panels or sub-panels shall be identified in accordance with Section 4.106.4.2.5.

4.106.4.3.6 Accessible EV spaces. In addition to the requirements in Section 4.106.4.3, EV spaces for hotels/motels and all EVSE, when installed, shall comply with the accessibility provisions for EV charging stations in the *California Building Code*, Chapter 11B.

Notes:

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2. See Vehicle Code Section 22511 for EV charging space signage in off-street parking facilities and for use of EV charging spaces.

**SECTION 4.403
FOUNDATION SYSTEMS
(Reserved)**

**SECTION 4.404
EFFICIENT FRAMING TECHNIQUES
(Reserved)**

**SECTION 4.405
MATERIAL SOURCES
(Reserved)**

**SECTION 4.406
ENHANCED DURABILITY
AND REDUCED MAINTENANCE**

**SECTION 4.201
GENERAL**

4.201.1 Scope. For the purposes of mandatory energy efficiency standards in this code, the California Energy Commission will continue to adopt mandatory standards.

Division 4.3 – WATER EFFICIENCY AND CONSERVATION

**SECTION 4.301
GENERAL**

**SECTION 4.302
DEFINITIONS**

**SECTION 4.303
INDOOR WATER USE**

4.303.1 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:

4.303.1.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-type Toilets.

4.303.1.2 Urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush. The effective flush volume of all other urinals shall not exceed 0.5 gallons per flush.

4.303.1.3 Showerheads.

4.303.1.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 1.8 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.

4.303.1.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 1.8 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.

4.303.1.4 Kitchen faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

4.303.1.4.3 Metering faucets. Metering faucets when installed in residential buildings shall not deliver more than 0.25 gallons per cycle.

4.303.1.4.4 Kitchen faucets. The maximum flow rate of kitchen faucets shall not exceed 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.

4.303.2 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the *California Plumbing Code* (Residential) located at www.hcd.ca.gov/CALGreen.html which shall meet the applicable standards referenced in Table 1701.1 of the *California Plumbing Code*.

**SECTION 4.409
LIFE CYCLE ASSESSMENT
(Reserved)**

**SECTION 4.410
BUILDING MAINTENANCE AND OPERATION**

4.410.1 Operation and maintenance manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the enforcing agency which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life cycle of the structure.
2. Operation and maintenance instructions for the following:
 - a. Equipment and appliances, including water-saving devices and systems, HVAC systems, photovoltaic systems, electric vehicle chargers, water-heating systems and other major appliances and equipment.
 - b. Roof and yard drainage, including gutters and downspouts.
 - c. Space conditioning systems, including condensers and air filters.
 - d. Landscape irrigation systems.
 - e. Water reuse systems.
3. Information from local utility, water and resource recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.

4.402.1 Definitions. Reserved.

**SECTION 4.403
FOUNDATION SYSTEMS
(Reserved)**

**SECTION 4.404
EFFICIENT FRAMING TECHNIQUES
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 - b. Roof and yard drainage, including gutters and downspouts.
 - c. Space conditioning systems, including condensers and air filters.
 - d. Landscape irrigation systems.
 - e. Water reuse systems.
3. Information from local utility, water and resource recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.

4.402.1 Definitions. Reserved.

**SECTION 4.403
FOUNDATION SYSTEMS
(Reserved)**

**SECTION 4.404
EFFICIENT FRAMING TECHNIQUES
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Division 4.3 – WATER EFFICIENCY AND CONSERVATION

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**SECTION 4.409
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BUILDING MAINTENANCE AND OPERATION**

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 - e. Water reuse systems.
3. Information from local utility, water and resource recovery providers on methods to further reduce resource consumption, including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60 percent and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water-conserving landscape and irrigation design and controllers which conserve water.

4.402.1 Definitions. Reserved.

**CONTINUED → TABLE 4.504.1
ADHESIVE VOC LIMIT^{1,2}
Less Water and Less Exempt Compounds in Grams per Liter**

ARCHITECTURAL APPLICATIONS	VOC LIMIT
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single-ply floor membrane adhesives	250
Other adhesives not specifically listed	50
SPECIALTY APPLICATIONS	
CPVC welding	510
ABS welding	490
Plastic cement welding	250
Adhesive primer for plastic	550
Contact adhesive	80
Special purpose contact adhesive	250
Structural wood member adhesive	140
Top and trim adhesive	250
SUBSTRATE SPECIFIC APPLICATIONS	
Metal to metal	30
Plastic foams	50
Porous material (except wood)	50
Wood	30
Fiberglass	80

1. If an adhesive is used to bond dissimilar substrates together, the adhesive with the highest VOC content shall be allowed.

2. For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168.

**TABLE 4.504.2
SEALANT VOC LIMIT
Less Water and Less Exempt Compounds in Grams per Liter**

SEALANTS	VOC LIMIT
Architectural	250
Marine deck	760
Nonmembrane roof	300
Roofway	250
Single-ply roof membrane	450
Other	420
SEALANT PRIMERS	
Architectural	250
Nonporous	775
Modified bituminous	500
Marine deck	760
Other	750

**TABLE 4.504.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS^{1,2}
Grams of VOC per Liter of Coating,
Less Water and Less Exempt Compounds**

COATING CATEGORY	VOC LIMIT
Flat coatings	50
Nonflat coatings	100
Nonflat high gloss coatings	150
SPECIALTY COATINGS	