

**45-DAY EXPRESS TERMS  
FOR  
PROPOSED BUILDING STANDARDS  
OF THE  
OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT**

**REGARDING ADOPTION OF AMENDMENTS TO THE 2007 CALIFORNIA BUILDING STANDARDS  
CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR), PARTS 2, 3, 4, 5 and 6 in TITLE 24,  
CCR, PART 11, CALIFORNIA GREEN BUILDING STANDARDS CODE**

**LEGEND FOR EXPRESS TERMS**

1. New California language and modified language is underlined.
2. Repealed text: All such language appears in ~~strikeout~~.

**The Office of Statewide Health Planning and Development proposes to adopt the 2007 edition of the California Green Building Standards Code (CGBC) as shown on the following pages. Adopt new text as follows:**

**EXPRESS TERMS**

**PREFACE**

This document is Part 11 of the official compilation and publication of the adoptions, amendments and repeal of regulations to California Code of Regulations, Title 24, also referred to as the California Building Standards Code. This Part is known as the California Green Building Standards Code.

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 have the same force of law and take effect 180 days after their publication unless otherwise stipulated. The California Building Standards Code applies to all occupancies in the State of California as annotated.

A city, county or city and county may make necessary changes to the provisions contained in this code which are 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. Building standards that were adopted by local ordinance and applicable to previous editions of the California Building Standards Code do not apply to this edition without appropriate adoption and the required filing.

**EFFECTIVE USE OF THIS CODE**

This format of this code is common to other parts of the California Building Standards Code and contains building standards applicable to occupancies which fall under the authority of different state agencies. Occupancies and applications under the authority of a specific state agency are identified in Chapter 1, Sections 103 through 106. Sections of this code which are applicable and adopted by each state agency are identified in the Application Checklist for each state agency contained in Chapter 11. The following outline may be helpful as a guide to establish which provisions are applicable to a specific occupancy.

1. Establish the type of occupancy.
2. Verify which state agency has authority for the established occupancy by reviewing the authorities list in Sections 103 through 106.
3. Once the appropriate agency has been identified, find the application checklist for that agency in Chapter 11.
4. The application checklist will list the green building measures adopted, provide the effective date and other information regarding each green building measure applicable to the established occupancy.
5. Each green building measure listed in the application checklist has a section number which correlates with a section number in Chapters 4 through 8.
6. More information is available for each green building measure listed in the application checklist in the correlated sections contained in Chapters 4 through 8.

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## CHAPTER 1

### ADMINISTRATION

#### SECTION 101 GENERAL

**101.1 Title.** These regulations shall be known as the California Green Building Standards Code and may be cited as such and will be referred to herein as “this code.” The California Green Building Standards Code is Part 11 of twelve parts of the official compilation and publication of the adoption, amendment and repeal of building regulations to the California Code of Regulations, Title 24, also referred to as the California Building Standards Code.

**101.2 Purpose.** The purpose of this code is to improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories:

1. Planning and design.
2. Energy efficiency.
3. Water efficiency and conservation.
4. Material conservation and resource efficiency.
5. Environmental air quality.

**101.3 Scope.** The provisions of this code shall apply to the planning, design, operation, construction, replacement, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such building structures throughout the State of California.

**101.3.1 State-regulated buildings, structures and applications.** Provisions of this code shall apply to the following buildings, structures, and applications regulated by state agencies as referenced in the Matrix Adoption Tables and as specified in Sections 103 through 106, except where modified by local ordinance pursuant to Section 101.7. When adopted by a state agency, the provisions of this code shall be enforced by the appropriate enforcing agency, but only to the extent of authority granted to such agency by the State Legislature.

1. State-owned buildings, including buildings constructed by the Trustees of the California State University, and to the extent permitted by California laws, buildings designed and constructed by the Regents of the University of California and regulated by the Building Standards Commission. See Section 103 for additional scoping provisions.
2. Energy efficiency standards regulated by the California Energy Commission
3. Low-rise residential buildings constructed throughout the State of California, including but not limited to, hotels, motels, lodging houses, apartment houses, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with common toilets or cooking facilities. See Section 104 for additional scoping provisions.
4. Public elementary and secondary schools, community college buildings and state-owned or state-leased essential service buildings regulated by the Division of the State Architect. See Section 105 for additional scoping provisions.
5. Qualified historical buildings and structures and their associated sites regulated by the State Historical Building Safety Board within the Division of the State Architect.
6. General acute care hospitals, acute psychiatric hospitals, skilled nursing and/or intermediate care facilities, clinics licensed by the Department of Public Health and correctional treatment centers regulated by the Office of Statewide Health Planning and Development. See Section 106 for additional scoping provisions.
7. Graywater systems regulated by the Department of Water Resources.

**101.4 Appendices.** Provisions contained in the appendices of this code shall not apply unless specifically adopted by a state agency or adopted by a local enforcing agency in compliance with Health and Safety Code Section 18938 (b) for Building Standards Law, Health and Safety Code Section 17950 for State Housing Law and Health and Safety Code Section 13869.7 for Fire Protection Districts. See Section 101.7 of this code.

**101.5 Referenced codes and standards.** The codes and standards referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

**101.5.1 Building.** The provisions of the California Building Code shall apply to the construction, alteration, movement, enlargement, replacement, repair, use and occupancy, location, maintenance, removal and demolition of every structure or any appurtenances connected or attached to such buildings or structures.

**101.5.2 Electrical.** The provisions of the California Electrical Code shall apply to the installation of electrical systems, including but not limited to, alterations, repair, replacement, equipment, appliances, fixtures, fittings and

appurtenances thereto.

**101.5.3 Mechanical.** The provisions of the California Mechanical Code shall apply to the installation, alterations, repair 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.

**101.5.4 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 where connected to a water or sewage system.

**101.5.5 Fire prevention.** The provisions of CCR, Title 19, Division 1 and CCR, Title 24, Part 2 and Part 9 relating to fire and panic safety as adopted by the Office of the State Fire Marshal shall apply to all structures, processes and premises for protection from the hazard of fire, panic and explosion.

**101.5.6 Energy.** The provisions of the California Energy Code shall apply to the minimum design and construction of buildings for energy efficiency.

#### **101.6 Order of precedence and use.**

**101.6.1 Differences.** In the event of any differences between these building standards and the standard reference documents, the text of these building standards shall govern.

**101.6.2 Specific provision.** Where a specific provision varies from a general provision, the specific provision shall apply.

**101.6.3 Conflicts.** When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirement shall prevail.

**101.7 City, county, or city and county amendments, additions or deletions.** This code does not limit the authority of city, county, or city and county governments to make necessary changes to the provisions contained in this code pursuant to Section 101.7.1. The effective date of amendments, additions, or deletions to this code of cities, counties, or city and counties filed pursuant to Section 101.8.1 shall be the date on which it is filed with CBSC. However, in no case shall the amendments, additions or deletions to this code be effective any sooner than the effective date of this code.

Local modifications shall comply with Health and Safety Code Section 18941.5 (b) for Building Standards Law, Health and Safety Code Section 17958.5 for State Housing Law, or Health and Safety Code Section 13869.7 for Fire Protection Districts.

#### **101.7.1 Findings and filings.**

1. The city, county, or city and county shall make express findings for each amendment, addition or deletion based upon climatic, topographical, or geological conditions.
2. The city, county, or city and county shall file the amendments, additions, or deletions expressly marked and identified as to the applicable findings. Cities, counties, cities and counties, and fire departments shall file the amendments, additions or deletions and the findings with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.
3. Findings prepared by fire protection districts shall be ratified by the local city, county, or city and county and filed with the California Department of Housing and Community Development at 1800 3<sup>rd</sup> Street, Room 260, Sacramento, CA 95811.
4. The city, county, or city and county shall obtain California Energy Commission approval for any energy related ordinances consistent with PRC 25402.1(h)(2) and Title 24, Part 1, Section 10-106. Local governmental agencies may adopt and enforce energy standards for newly constructed buildings, additions, alterations, and repairs provided the California Energy Commission finds that the standards will require buildings to be designed to consume no more energy than permitted by Part 6. Such local standards include, but are not limited to adopting the requirements of Part 6 before their effective date, requiring additional energy conservation measures, or setting more stringent energy budgets.

**101.8 Alternate materials, designs and methods of construction and equipment.** The provisions of this code are not intended to prevent the use of any alternate material, appliance, installation, device, arrangement, method, design or method of construction not specifically prescribed by this code. Consideration and compliance provisions for occupancies regulated by adopting state agencies are found in the sections listed below.

1. Section 104.11, Appendix Chapter 1, 2007 California Building Code (CBC) for the California Building Standards Commission and the Division of the State Architect.
2. Section 108.7.2, CBC for the Department of Housing and Community Development.

3. Section 7-104, 2007 California Administrative Code for the Office of Statewide Health Planning and Development.

**101.9 Effective date of this code.** Only those standards approved by the California Building Standards Commission that are effective at the time an application for a building permit is submitted shall apply to the plans and specifications for, and to the construction performed under, that permit. For the effective dates of the provisions contained in this code, see the appropriate application checklist in Chapter 11 of this code and the History Note page of this code.

**101.10 Mandatory requirements.** This code contains both optional and mandatory green building measures. Mandatory and optional measures are identified in the appropriate application checklist contained in Chapter 11 of this code.

**101.11 Effective use of this code.** The following steps shall be used to establish which provisions of this code are applicable to a specific occupancy:

1. Establish the type of occupancy.
2. Verify which state agency has authority for the established occupancy by reviewing the authorities list Sections 103 through 106.
3. Once the appropriate agency has been identified, find the application checklist for that agency in Chapter 11.
4. The application checklist will list the green building measures adopted, provide the effective date and other information regarding each green building measure applicable to the established occupancy.
5. Each green building measure listed in the application checklist has a section number which correlates with a section number in Chapters 4 through 8.
6. More information is available for each green building measure listed in the application checklist in the correlated sections contained in Chapters 4 through 8.

## **SECTION 102** **CONSTRUCTION DOCUMENTS AND INSTALLATION VERIFICATION**

**102.1 Submittal documents.** Construction documents and other data shall be submitted in one or more sets with each application for a permit. Where special conditions exist, the enforcing agency is authorized to require additional construction documents to be prepared by a licensed design professional.

**Exception:** The enforcing agency is authorized to waive the submission of construction documents and other data not required to be prepared by a licensed design professional.

**102.2 Information on construction documents.** Construction documents shall be of sufficient clarity to indicate the location, nature and scope of the proposed green building feature and show that it will conform to the provisions of this code, the California Building Standards Code and other relevant laws, ordinances, rules and regulations as determined by the enforcing agency.

**102.3 Verification.** Documentation of conformance for applicable green building measures shall be provided to the enforcing agency. Third-party verification or other special documentation shall be provided as specified in this code. Alternate methods of documentation shall be acceptable when the enforcing agency finds that the proposed alternate documentation is satisfactory to demonstrate substantial conformance with the intent of the proposed green building measure.

## **SECTION 106** **OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT**

**106.1 OSHPD 1.** Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

**Application**—General acute care hospitals and acute psychiatric hospitals, excluding distinct part units or distinct part freestanding buildings providing skilled nursing or intermediate care services. For structural regulations: Skilled nursing facilities and/or intermediate care facilities except those skilled nursing facilities and intermediate care facilities of single-story, Type V, wood or light steel-frame construction.

**Enforcing agency**—Office of Statewide Health Planning and Development (OSHPD). The office shall enforce the Division of the State Architect—Access Compliance regulations and the regulations of the Office of the State Fire Marshal for the above stated facility types.

### **106.1.1 Applicable administrative standards.**

1. Title 24, Part 1, California Code of Regulations: Chapters 6 and 7.
2. Title 24, Part 2, California Code of Regulations: Sections 101 and 110 of Chapter 1 and Appendix Chapter 1.

**106.1.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 9, and 12.

**106.1.3 Identification of amendments.** For applications listed in Section 106.1, amendments appear in this code preceded with the acronym [OSHDP 1].

**Authority**—Health and Safety Code Sections 127010, 127015, 1275 and 129850.

**References**—Health and Safety Code Sections 19958, 127010, 127015, 129680, 1275 and 129675 through 130070.

**106.2 OSHDP 2.** Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

**Application**—Skilled nursing facilities and intermediate care facilities, including distinct part skilled nursing and intermediate care services on a general acute care or acute psychiatric hospital license, provided either are in a separate unit or a freestanding building. For structural regulations: Single-story, Type V skilled nursing facility and/or intermediate care facilities utilizing wood or light steel-frame construction.

**Enforcing agency**—Office of Statewide Health Planning and Development (OSHDP). The office shall also enforce the Division of the State Architect—Access Compliance regulations and the regulations of the Office of the State Fire Marshal for the above-stated facility type.

**106.2.1 Applicable administrative standards.**

1. Title 24, Part 1, California Code of Regulations: Chapter 7.

2. Title 24, Part 2, California Code of Regulations: Sections 101 and 110 of Chapter 1 and Appendix Chapter 1.

**106.2.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 9, and 12.

**106.2.3 Identification of amendments.** For applications listed in Section 106.2, amendments appear in this code preceded with the acronym [OSHDP 2].

**Authority**—Health and Safety Code Sections 127010, 127015, 1275 and 129850.

**References**—Health and Safety Code Sections 127010, 127015, 1275 and 129680.

**106.3 OSHDP 3.** Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

**Application**—Licensed clinics and any freestanding building under a hospital license where outpatient clinical services are provided.

**Enforcing agency**—Local building department.

**106.3.1 Applicable administrative standards.**

1. Title 24, Part 1, California Code of Regulations: Chapter 7.

2. Title 24, Part 2, California Code of Regulations: Sections 101 and 110 of Chapter 1 and Appendix Chapter 1.

**106.3.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 9, and 12.

**106.3.3 Identification of amendments.** For applications listed in Section 106.3, amendments appear in this code without the acronym [OSHDP 3].

**Authority**—Health and Safety Code Sections 127010, 127015 and 1226.

**References**—Health and Safety Code Sections 127010, 127015, 129885 and 1226, Government Code Section 54350 and State Constitution Article 11, Section 7.

**106.4 OSHDP 4.** Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

**Application**—Correctional treatment centers.

**Enforcing agency**—Office of Statewide Health Planning and Development (OSHDP). The office shall also enforce the Division of the State Architect—Access Compliance regulations and the regulations of the Office of the State Fire Marshal for the above-stated facility types.

**106.4.1 Applicable administrative standards.**

1. Title 24, Part 1, California Code of Regulations: Chapter 7.

2. Title 24, Part 2, California Code of Regulations: Sections 101 and 110 of Chapter 1 and Appendix Chapter 1.

**106.4.2 Applicable building standards.** California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 9, and 12.

**106.4.3 Identification of amendments.** For applications listed in Section 106.4, amendments appear in this code preceded with the acronym [OSHDP 4], unless the entire chapter is applicable.

**Authority**—Health and Safety Code Sections 127010, 127015 and 129790.

**References**—Health and Safety Code Sections 127010, 127015, 1275 and 129675 through 130070.

## CHAPTER 2

### DEFINITIONS

#### SECTION 201 GENERAL

**201.1 Scope.** Unless otherwise stated, the following words and terms shall, for the purposes of this code, have the meanings shown in this chapter.

**201.2 Interchangeability.** Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

**201.3 Terms defined in other documents.** Where terms are not defined in this code and are defined in the California Building Standards Code or other referenced documents, such terms shall have the meanings ascribed to them as in those publications.

**201.4 Terms not defined.** Where terms are not defined as specified in this section, such terms shall have ordinarily accepted meanings such as the context implies.

#### SECTION 202 DEFINITIONS

**AUTOMATIC.** Automatic means capable of operating without human intervention.

**BUILDING ENVELOPE.** The ensemble of exterior and demising partitions of a building that enclose conditioned space.

**CALIFORNIA BUILDING CODE.** The current version of the California Building Code.

**CALIFORNIA ELECTRICAL CODE.** The current version of the California Electrical Code.

**CALIFORNIA ENERGY CODE.** The current version of the California Energy Code.

**CALIFORNIA MECHANICAL CODE.** The current version of the California Mechanical Code.

**CALIFORNIA PLUMBING CODE.** The current version of the California Plumbing Code.

**CONDITIONED SPACE.** A space in a building that is either directly conditioned or indirectly conditioned.

**COOLING EQUIPMENT.** Equipment used to provide mechanical cooling for a room or rooms in a building.

**ENERGY COMMISSION.** The California State Energy Resources Conservation and Development Commission.

**ENFORCING AGENCY.** The designated department or agency as specified by statute or regulation.

**GREEN BUILDING.** A holistic approach to design, construction, and demolition that minimizes the building's impact on the environment, the occupants, and the community.

**INFILTRATION.** An uncontrolled inward air leakage from outside a building or unconditioned space, including leakage through cracks and interstices, around windows and doors and through any other exterior or demising partition or pipe or duct penetration.

**KITCHEN.** That portion in a residential dwelling unit that is a room or area used for cooking, food storage and preparation and washing dishes, including associated counter tops and cabinets, refrigerator, stove, ovens and floor area.

**LOW-RISE RESIDENTIAL BUILDING.** A building, other than a hotel/motel, that is of Occupancy Group R, Division 1, and is three stories or less, or that is of Occupancy Group R, Division 3.

**OUTDOOR AIR (Outside air).** Air taken from outdoors and not previously circulated in the building.

**RESIDENTIAL BUILDING.** (See "low-rise residential building.")

**VAPOR BARRIER.** Material that has a permeance of one perm or less and that provides resistance to the transmission of water vapor.

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850

**CHAPTER 3**

**GREEN BUILDING**

**SECTION 301**  
**GENERAL**

**301.1 Scope.** Buildings shall be designed to include the green building measures specified as mandatory in the application worksheets contained in Chapter 11 of this code. Optional green building measures may be included but are not required.

**SECTION 302**  
**MIXED OCCUPANCY BUILDINGS**

**302.1 Mixed occupancy buildings.** In mixed occupancy buildings, each portion of a building shall comply with the specific green building measures applicable to each specific occupancy.

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850

## CHAPTER 4

### PLANNING AND DESIGN

#### SECTION 401

##### GENERAL

**401.1 Purpose.** The provisions of this chapter 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 402

##### DEFINITIONS

**402.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**WATTLES.** Wattles are used to reduce sediment in runoff. Wattles are often constructed of natural plant materials such as hay, straw or similar material shaped in the form of tubes and placed on a downflow slope. Wattles are also used for perimeter and inlet controls.

#### SECTION 403

##### SITE SELECTION

(Reserved)

#### SECTION 404

##### SITE PRESERVATION

(Reserved)

#### SECTION 405

(Reserved)

#### SECTION 406

##### SITE DEVELOPMENT

**406.1 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.

**406.2 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 develop a plan to manage storm water drainage during construction. A plan to manage storm water drainage during construction shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site. One or more of the followings methods shall be utilized to manage storm water drainage.

1. Retention basins of sufficient size shall be utilized to retain storm water on the site.
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, wattles, or other method approved by the enforcing agency.
3. Compliance with a lawfully enacted storm water management ordinance.

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850

## CHAPTER 5

### ENERGY EFFICIENCY

#### SECTION 501 GENERAL

**501.1 Scope.** The provisions of this chapter shall outline means of achieving enhanced building energy efficiency.

#### SECTION 502 DEFINITIONS

**502.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**BUILDING COMMISSIONING.** A systematic quality assurance process that spans the entire design and construction process. Building commissioning helps ensure that a new building's performance meets owner expectations by verifying and documenting that building systems and components are planned, designed, installed, tested, operated, and maintained to meet the owner's project requirements.

**ENERGY STAR.** A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. ENERGY STAR is a voluntary labeling program designed to identify and promote energy-efficient products to reduce greenhouse gas emissions.

**DEMAND RESPONSE AUTOMATION INTERNET SOFTWARE CLIENT.** Software that resides in a building Energy Management Control System that can receive a demand response signal and automatically reduce HVAC and lighting system loads. Demand Response programs developed by Utilities and ISO's depend upon timely and reliable communications of events and information to the buildings that are participating in the programs.

**GEOTHERMAL.** Renewable energy generated by deep-earth water or steam.

**OVERCURRENT PROTECTION DEVICE RATING.** The highest current at rated voltage that an overcurrent protection device is intended to interrupt under standard test conditions.

**PROCESS.** An activity or treatment that is not related to the space conditioning , lighting, service water heating, or ventilating of a building as it relates to human occupancy.

**TIME DEPENDENT VALUATION (TDV) ENERGY.** The time varying energy caused to be used by the building to provide space conditioning and water heating and for specified buildings lighting. TDV energy accounts for the energy used at the building site and consumed in producing and in delivering energy to a site, including, but not limited to, power generation, transmission and distribution losses.

#### SECTION 504 PRESCRIPTIVE APPROACH

**504.1 ENERGY STAR equipment and appliances.** All equipment and appliances provided by the builder shall be ENERGY STAR labeled if ENERGY STAR is applicable to that equipment or appliance.

**504.2 Energy monitoring.** Provide sub-metering or equivalent combinations of sensor measurements and thermodynamic calculations, if appropriate, to record energy use data for each major energy system in the building, including chillers, heat pumps, packaged AC systems, fans, pumps, cooling towers, boilers and other heating systems, lighting systems, and process loads. This energy use data, once collected, shall be stored within a data management system.

**504.2.1 Data storage.** The data management system must be capable of electronically storing energy data and creating user reports showing hourly, daily, monthly and annual energy consumption for each major energy system. Hourly data shall be retained a minimum of 30 days, daily data shall be retained a minimum of 6 months and monthly data shall be retained a minimum of 2 years.

**504.2.2 Data access.** Hourly energy use data shall be accessible through a central data management system and must be available daily.

**504.4 Commissioning.** Building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's project requirements. Commissioning shall be performed in accordance with this section by personnel trained and certified in commissioning by a nationally recognized organization. Commissioning requirements shall include as a minimum:

1. Owner's Project Requirements.
2. Basis of Design.
3. Commissioning measures shown in the construction documents.

4. Commissioning Plan
5. Functional Performance Testing.
6. Post Construction Documentation & Training.
7. Commissioning Report.

All building systems and components covered by Title 24, Part 6, as well as process equipment and controls, and renewable energy systems shall be included in the scope of the Commissioning Requirements.

**504.4.1 Owner's Project Requirements (OPR).** The expectations and requirements of the building shall be documented before the design phase of the project begins. At a minimum, this documentation shall include the following:

1. Environmental and Sustainability Goals.
2. Energy Efficiency Goals.
3. Indoor Environmental Quality Requirements.
4. Equipment and Systems Expectations.
5. Building Occupant and O&M Personnel Expectations.

**504.4.2 Basis of Design (BOD).** A written explanation of how the design of the building systems meets the Owner's Project Requirements shall be completed at the design phase of the building project, and updated as necessary during the design and construction phases. At a minimum, the Basis of Design document shall cover the following systems:

1. Heating, Ventilation, Air Conditioning (HVAC) Systems and Controls.
2. Indoor Lighting System and Controls.
3. Water Heating System.
4. Renewable Energy Systems.

**504.4.3 Commissioning plan.** A commissioning plan shall be completed to document the approach to how the project will be commissioned and shall be started during the design phase of the building project. The Commissioning Plan shall include the following at a minimum:

1. General Project Information.
2. Commissioning Goals.
3. Systems to be commissioned. Plans to test systems and components shall include at a minimum:
  - a. A detailed explanation of the original design intent.
  - b. Equipment and systems to be tested, including the extent of tests.
  - c. Functions to be tested.
  - d. Conditions under which the test shall be performed.
  - e. Measurable criteria for acceptable performance.
4. Commissioning Team Information.
5. Commissioning Process Activities, Schedules & Responsibilities – plans for the completion of Commissioning Requirements listed in 504.4.4 through 504.4.6 shall be included.

**504.4.4 Functional performance testing.** Functional performance tests shall demonstrate the correct installation and operation of each component, system, and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

**504.4.5 Post construction documentation and training.** A Systems Manual and Systems Operations Training are required.

**504.4.5.1 Systems manual.** Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner and facilities operator. At a minimum, the Systems Manual shall include the following:

1. Site Information, including facility description, history and current requirements.
2. Site Contact Information.
3. Basic Operations & Maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log
4. Major Systems.
5. Site Equipment Inventory and Maintenance Notes.
6. Other Resources & Documentation.

**504.4.5.2 Systems operations training.** The training of the appropriate maintenance staff for each equipment type and/or system shall include, as a minimum, the following:

1. System/Equipment overview (what it is, what it does and what other systems and/or equipment it interfaces with).
2. Review of the information in the Systems Manual.
3. Review of the record drawings on the system/equipment.

**504.4.6 Commissioning report.** A complete report of commissioning process activities undertaken through the design, construction and post-construction phases of the building project shall be completed and provided to the

owner.

**504.5 Building orientation and shading.** Locate, orient and shade the building as follows:

1. When site and location permit, orient the building with the long sides facing north and south.
2. Provide exterior shade for south-facing windows during the peak cooling season.
3. Provide vertical shading against direct solar gain and glare due to low altitude sun angles for east- and west-facing windows.
4. Protect the building from thermal loss, drafts, and degradation of the building envelope caused by wind and wind-driven materials such as dust, sand, snow, and leaves with building orientation and landscape features.

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850

**CHAPTER 6**

**WATER EFFICIENCY AND CONSERVATION**

**(Not Adopted by OSHPD)**

## CHAPTER 7

### MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

#### SECTION 701 GENERAL

**701.1 Scope.** The provisions of this chapter shall outline means of achieving material conservation and resource efficiency through reuse of existing building stock and materials; use of recycled, regional, rapidly renewable, and certified wood materials; and employment of techniques to reduce pollution through recycling of materials and reduction of building pollutants prior to occupancy.

#### SECTION 702 DEFINITIONS

**702.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**EMBODIED ENERGY.** The energy used for raw material extraction, transportation, manufacturing, assembly, installation, and disposal during the life of a product, including the potential energy stored within the product.

**LIFE CYCLE ASSESSMENT (LCA).** A technique to evaluate the relevant energy and material consumed and environmental emissions associated with the entire life of a product, process, activity or service.

**OVE.** Optimal Value Engineering, another term for advanced wood framing techniques.

**POST-CONSUMER CONTENT.** Waste material generated by consumers after it is used and which would otherwise be discarded.

**PRE-CONSUMER (or POST-INDUSTRIAL) CONTENT.** Material diverted from the waste stream during one manufacturing process, including scraps, damaged goods, and excess production, that is used in another manufacturing process.

**RECYCLED CONTENT.** Refer to International Organization of Standards ISO 14021—Environmental labels and declarations—Self-declared environmental claims (Type II environmental labeling).

**RECYCLED CONTENT VALUE (RCV).** Material cost multiplied by post-consumer content plus ½ the pre-consumer content, or  $RCV = \$ X (\text{post-consumer content} + \frac{1}{2} \text{pre-consumer content})$ .

#### SECTION 703 FOUNDATION SYSTEMS (Reserved)

#### SECTION 705 MATERIAL SOURCES

**705.1 Regional materials.** Compared to other products in a given product category, select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site.

1. For those materials locally manufactured, select materials manufactured using low embodied energy or those that will result in net energy savings over their useful life.
2. Regional materials shall make up at least 10%, based on cost, of total materials value.
3. If regional materials make up only part of a product, their values are calculated as percentages based on weight.
4. Provide documentation of the origin, net projected energy savings, and value of regional materials.

**705.2 Bio-based materials.** Select bio-based building materials and products made from solid wood, engineered wood, bamboo, wool, cotton, cork, straw, natural fibers, products made from crops (soy-based, corn-based) and other bio-based materials with at least 50% bio-based content.

**705.2.1 Certified wood products.** Employ wood-based materials and products comprising at least 50% of a major building component, such as framing, flooring, or millwork, which are certified in accordance with one of the following standards organizations' requirements:

1. Forest Stewardship Council (FSC) Principles and Criteria for wood framing and paneling. (FSC also has a certification process for federal lands.)
2. Canadian Standards Association Z809 Standards. (CSA may also have a certification process for federal lands.)
3. Sustainable Forestry Initiative Standard, 2005-2009.
4. American Tree Farm System, 2004-2008 AFF Standard

5. Programme for the Endorsement of Forest Certification Schemes (PEFC)

**705.2.2 Rapidly renewable materials.** Use materials made from plants harvested within a ten-year cycle for at least 2.5% of total materials value, based on estimated cost.

**705.3 Reused materials.** Use salvaged, refurbished, refinished, or reused materials for a minimum of 5% of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values.

**705.3.1 Sources of reused materials.** Sources of some reused materials can be found at <http://www.ciwmb.ca.gov/RCP/Product.asp?VW=CAT&CATID=257>

See also Appendix A, Sections A405.1 and A405.2 for on-site materials reuse.

**705.4 Recycled content.** Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV) for a minimum of 10% of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values.

**705.4.1 Determination of recycled content value (RCV).** The recycled content of a material assembly shall be determined by weight, and the fractional value of the weight is then multiplied by the total estimated cost of the material assembly.

**705.4.2 Sources of recycled materials.** Sources and recycled content of some recycled materials can be found at <http://www.ciwmb.ca.gov/RCP/Product.asp?VW=CAT&CATID=257>.

## **SECTION 706**

### **ENHANCED DURABILITY AND REDUCED MAINTENANCE**

**706.1 Choice of materials.** Compared to other products in a given product category, choose materials proven to be characterized by one or more of the following.

**706.1.1 Service life.** Select materials for longevity and minimal deterioration under conditions of use.

**706.1.2 Reduced maintenance.** Select materials that require little, if any, finishing. For those with surface protection, choose materials that do not require frequent applications of toxic or malodorous finishes.

**706.1.3 Recyclability.** Select materials that can be re-used or recycled at the end of their service life in the project.

## **SECTION 707**

### **WATER RESISTANCE AND MOISTURE MANAGEMENT**

**707.2 Moisture control.** Employ moisture control measures by one of the following methods.

**707.2.1 Sprinklers.** Design and maintain landscape irrigation systems to prevent spray on structures.

**707.2.2 Entries and openings.** Design exterior entries and openings to prevent water intrusion into buildings, using features such as overhangs and recesses, flashings integrated with a drainage plane, and use non-pervious interior finishes in the vicinity of such openings.

## **SECTION 708**

### **CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING**

**708.1 Construction waste diversion.** Establish a construction waste management plan for the diverted materials, or meet local construction and demolition waste management ordinance, whichever is more stringent.

**708.3 Construction waste reduction of at least 50%.** Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris, or meet local ordinance, whichever is more stringent. Calculate the amount of materials diverted by weight or volume, but not by both.

**Exceptions:**

1. Excavated soil and land-clearing debris
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.

**708.4 Excavated soil and land clearing debris.** 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.

## **SECTION 709**

### **LIFE CYCLE ASSESSMENT**

**709.1 Materials and system assemblies.** Select materials assemblies based on life cycle assessment of their embodied energy and/or green house gas emission potentials.

**709.1.1 Materials and system assemblies.** Software for calculating life cycle costs for materials and assemblies may be found at:

1. the Athena Institute web site at: <http://www.athenasmi.ca/tools/impactEstimator/>
2. the NIST BEES web site at: <http://www.bfml.nist.gov/oae/software/bees/>.
3. Life Cycle assessment may also be done in accordance with ISO Standard 14044, [www.iso.ch](http://www.iso.ch).

**709.1.2 Additional resources.** More information on life cycle assessment may be found at the Sustainable Products Purchasers Coalition: [www.sppcoalition.org](http://www.sppcoalition.org); at the American Center for Life Cycle Assessment: [www.lcacenter.org](http://www.lcacenter.org); at U.S. EPA Life Cycle Assessment Research: [www.epa.gov/nrmrl/lcaccess/index.html](http://www.epa.gov/nrmrl/lcaccess/index.html); and at U.S. EPA Environmentally Preferable Products, [www.epa.gov/epp](http://www.epa.gov/epp).

## **SECTION 710 BUILDING MAINTENANCE AND OPERATION**

**710.1 Recycling by occupants.** Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics and metals.

**710.1.1 Sample ordinance.** Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act.) A sample ordinance for use by local agencies may be found in Appendix A of the document at the California Integrated Waste Management's web site at: <http://www.ciwmb.ca.gov/Publications/LocalAsst/31000012.doc>

See also Section 504 for commissioning.

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850

**CHAPTER 8**

**ENVIRONMENTAL QUALITY**

**SECTION 801**  
**GENERAL**

**801.1 Scope.** The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants, and neighbors.

**SECTION 802**  
**DEFINITIONS**

**802.1 Definitions.** The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

**AGRIFIBER PRODUCTS.** Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

**COMPOSITE WOOD PRODUCTS.** Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. Composite wood products does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber as specified in "Structural Glued Laminated Timber" (ANSI A190.1-2002) or prefabricated wood I-joists.

**HVAC UNITS, SMALL.** Those containing less than 0.5 lbs of refrigerant.

**INTERIOR, BUILDING,** The inside of the weatherproofing system.

**MERV.** Filter minimum efficiency reporting value, based on ASHRAE 52.2-1999.

**MULTI-OCCUPANT SPACES.** Indoor spaces used for presentations and training, including classrooms and conference rooms.

**SINGLE OCCUPANT SPACES.** Private offices, workstations in open offices, reception workstations, and ticket booths.

**VOC.** A volatile organic compound broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements.

**SECTION 804**  
**POLLUTANT CONTROL**

**804.4 Finish material pollutant control.** Finish materials shall comply with Sections 804.4.1 through 804.4.4.

**804.4.1 Adhesives and sealants.** Adhesives and sealants used on the project shall meet the requirements of the following standards.

1. Adhesives, adhesive bonding primers, adhesive primers, sealants and sealant primers shall comply with Table 804.4.1.
2. Aerosol adhesives shall meet the requirements of California Code of Regulations, Title 17, commencing with Section 94507, <http://ccr.oal.ca.gov/>.

**804.4.2 Paints and coatings.** Architectural paints and coatings shall comply with Table 804.4.2.

**TABLE 804.4.1**  
**ADHESIVE VOC LIMIT\***

**Less Water and Less Exempt Compounds in Grams per Liter**

<b><u>Architectural Applications</u></b>	<b><u>Current VOC Limit</u></b>
<u>Indoor Carpet Adhesives</u>	<u>50</u>
<u>Carpet Pad Adhesives</u>	<u>50</u>
<u>Outdoor Carpet Adhesives</u>	<u>150</u>
<u>Wood Flooring Adhesive</u>	<u>100</u>
<u>Rubber Floor Adhesives</u>	<u>60</u>
<u>Subfloor Adhesives</u>	<u>50</u>
<u>Ceramic Tile Adhesives</u>	<u>65</u>
<u>VCT and Asphalt Tile Adhesives</u>	<u>50</u>
<u>Dry Wall and Panel Adhesives</u>	<u>50</u>

Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250

**TABLE 804.4.2**

**COATING VOC LIMITS**

**Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds**

COATING CATEGORY	CEILING LIMIT*	CURRENT LIMIT	EFFECTIVE DATE 7/1/08	EFFECTIVE DATE
Bond Breakers	350			
Clear Wood Finishes	350	275		
Varnish	350	275		
Sanding Sealers	350	275		
Lacquer	680	275		
Clear Brushing Lacquer	680	275		
Concrete-Curing Compounds	350	100		
Dry-Fog Coatings	400	150		
Fire-Proofing Exterior Coatings	450	350		
Flats	250	100	50	
Floor Coatings	420	50		
Graphic Arts (Sign) Coatings	500			
Industrial Maintenance (IM) Coatings	420	100		
High Temperature IM Coatings		420		
Zinc-Rich IM Primers	420	100		
Japans/Faux Finishing Coatings	700	350		
Magnesite Cement Coatings	600	450		
Mastic Coatings	300			
Metallic Pigmented Coatings	500			
Multi-Color Coatings	420	250		
Nonflat Coatings	250	50		
Nonflat High Gloss	250	50		
Pigmented Lacquer	680	275		
Pre-Treatment Wash Primers	780	420		
Primers, Sealers, and Undercoaters	350	100		
Quick-Dry Enamels	400	50		
Quick-Dry Primers, Sealers, and Undercoaters	350	100		
Recycled Coatings	250			
Roof Coatings	300	50		
Roof Coatings, Aluminum	500	100		
Roof Primers, Bituminous	350			
Rust Preventative Coatings	420	100		
Shellac				
Clear	730			
Pigmented		550		
Specialty Primers	350	100		
Stains	350	100		
Interior	250			
Swimming Pool Coatings				
Repair	650	340		
Other	340			
Waterproofing Sealers	400	100		
Waterproofing Concrete/Masonry Sealers	400	100		
Wood Preservatives				
Below-Ground	350			
Other		350		

\* The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table of Standards.

**804.4.3 Carpet systems.** All carpet installed in the building interior shall meet the testing and product requirements of one of the following:

1. Carpet and Rug Institute's Green Label or Green Label Plus Program, <http://www.carpet-rug.com/>
2. CDPH Standard Practice for the testing of VOCs (Specification 01350)
3. Department of General Services, California Gold Sustainable Carpet Standard, <http://www.green.ca.gov/EPP/standards.htm>
4. Scientific Certifications Systems Indoor Advantage™ Gold, <http://www.scscertified.com/iaq/indooradvantage.htm>

**804.4.3.1 Carpet cushion.** All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.

**804.4.3.2 Carpet adhesive.** All carpet adhesive shall meet the requirements of Section 804.1.1: VOC limit of 50 grams per liter (less water and less exempt compounds).

**804.4.4 Composite wood products.** Hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 804.4.4

**804.4.4.1 Early compliance.** Where complying product is available for non-residential occupancies, meet Phase 2 requirements before the compliance dates indicated in Table 804.4.

**804.4.4.2 Agrifiber products.** Agrifiber products shall contain no added urea-formaldehyde resins.

**804.4.4.3 Adhesives.** Adhesives used to fabricate composite wood and agrifiber assemblies shall contain no urea-formaldehyde resins.

**804.4.4.4 Documentation.** Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation shall include at least one of the following.

1. Mill certifications and specifications.
2. Chain of custody certifications.
3. Other methods acceptable to the enforcing agency.

**TABLE 804.4.4**  
**FORMALDEHYDE LIMITS**

Maximum formaldehyde emissions in parts per million.

Product	Phase 1		Phase 2			
	Jan 1, 2009	Jul 1, 2009	Jan 1, 2010	Jan 1, 2011	Jan 1, 2012	Jul 1, 2012
Hardwood Plywood Veneer Core	0.08		0.05			
Hardwood Plywood Composite Core		0.08				0.05
Particle Board	0.18			0.09		
Medium Density Fiberboard	0.21			0.11		
Thin Medium Density Fiberboard <sup>1</sup>	0.21				0.13	

<sup>1</sup>Thin medium density fiberboard has a maximum thickness of eight millimeters.

**804.4.5 Resilient flooring systems.** Comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List, [www.chps.net/manual/lem\\_table.htm](http://www.chps.net/manual/lem_table.htm).

**804.4.6 Thermal Insulation.** Comply with Chapter 12-13 in Title 24, Part 12, the California Referenced Standards Code, and with the VOC-emission limits defined in CHPS Low-emitting Materials List, [www.chps.net/manual/lem\\_table.htm](http://www.chps.net/manual/lem_table.htm).

**804.4.7 Acoustical ceilings and wall panels.** Comply with Chapter 8 in Title 24, Part 2, the California Building Code, and with the VOC-emission limits defined in the CHPS Low-emitting Materials List, [www.chps.net/manual/lem\\_table.htm](http://www.chps.net/manual/lem_table.htm).

**804.5 Hazardous particulates and chemical pollutants.** Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.

**804.5.1 Entryway systems.** Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors.

1. Qualifying entryways are those that serve as regular entry points for building users.
2. Acceptable entryway systems include, but are not limited to, permanently installed grates, grilles, or slotted systems that allow cleaning underneath.
3. Roll-out mats are acceptable only when maintained regularly by janitorial contractors as documented in service contract, or by in-house staff as documented by written policies and procedures.

**804.7 Environmental tobacco smoke (ETS) control.** Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings; or as enforced by ordinances, regulations, or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent.

**SECTION 805**  
**INDOOR MOISTURE CONTROL**

**805.1 Indoor moisture control.** Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 and Chapter 14. For additional measures not applicable to low-rise residential occupancies, see Section 707.2 of this code.

**SECTION 807**  
**ENVIRONMENTAL COMFORT**

**807.5 Acoustical control.** Employ building assemblies and components with Sound Transmission Coefficient (STC) values determined in accordance with ASTM E90 and ASTM E413.

**807.5.1 Exterior noise transmission.** Wall and roof-ceiling assemblies making up the building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for any of the following building locations:

1. Within 1000 ft. (300 m.) of freeways.
2. Within 5 mi. (8 km.) of airports serving more than 10,000 commercial jets per year.
3. Where sound levels at the property line regularly exceed 65 decibels, other than occasional sound due to church bells, train horns, emergency vehicles and public warning systems.

**807.5.2 Interior sound.** Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 50.

**SECTION 808**  
**OUTDOOR AIR QUALITY**  
**(Reserved)**

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850

## CHAPTER 9

### REFERENCED STANDARDS

#### SECTION 901

##### GENERAL

**901.1** This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard.

<b>AAMA</b> American Architectural Manufacturers Association
1827 Walden Office Square
Suite 550
Schaumburg, IL 60173-4268
<a href="http://www.aamanet.org">www.aamanet.org</a>
<b>ANSI</b> American National Standards Institute
Operations Office
25 West 43rd Street
Fourth Floor
New York, NY 10036
<a href="http://www.ansi.org">www.ansi.org</a>
<b>ARI</b> Air Conditioning and Refrigeration Institute
4100 North Fairfax Drive
Suite 200
Arlington, VA 22203
<a href="http://www.ari.org">www.ari.org</a>
<b>ASHRAE</b> American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
1791 Tullie Circle, NE
Atlanta, GA 30329
<a href="http://www.ashrae.org">www.ashrae.org</a>
<b>ASME</b> American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990
<a href="http://www.asme.org">www.asme.org</a>
<b>ASTM</b> ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2859
<a href="http://www.astm.org">www.astm.org</a>
<b>CSA</b> Canadian Standards Association
5060 Spectrum Way, Suite 100
Mississauga, Ontario, Canada L4W 5N6
<a href="http://www.csa.ca">www.csa.ca</a>
<b>CTI</b> Cooling Technology Institute
2611 FM 1960 West, Suite A-101
Houston, TX 77068-3730
<a href="http://www.cti.org">www.cti.org</a>
<b>DOE</b> U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585
<a href="http://www.energy.gov">www.energy.gov</a>
<b>HI</b> Hydronics Institute, Division of the Gas Appliance Manufacturers Association
P.O. Box 218
Berkeley Heights, NJ 07054

<a href="http://www.gamanet.org">www.gamanet.org</a>
<b>IAPMO</b> International Association of Plumbing and Mechanical Officials
5001 E. Philadelphia St.
Ontario, CA 91761
<a href="http://www.iapmo.org">www.iapmo.org</a>
<b>ICC</b> International Code Council, Inc.
National Headquarters
500 New Jersey Avenue NW
6 <sup>th</sup> Floor
Washington, D.C. 20001-2070
<a href="http://www.iccsafe.org">www.iccsafe.org</a>
California Office
Los Angeles District Office
5360 Workman Mill Road
Whittier, CA 90601
<a href="http://www.iccsafe.org">www.iccsafe.org</a>
<b>NFPA</b> National Fire Protection Association
1 Batterymarch Park
Quincy, Massachusetts
USA 02169-7471
<a href="http://www.nfpa.org">www.nfpa.org</a>
<b>NFRC</b> National Fenestration Rating Council, Inc.
6305 Ivy Lane, Suite 140
Greenbelt, MD 20770
<a href="http://www.nfrc.org">www.nfrc.org</a>
<b>SMACNA</b> Sheet Metal and Air Conditioning Contractors National Association, Inc.
4021 Lafayette Center Drive
Chantilly, VA 20151-1209
<a href="http://www.smacna.org">www.smacna.org</a>
<b>UL</b> Underwriters Laboratories Inc.
Headquarters
333 Pfingsten Road
Northbrook, IL 60062-2096
<a href="http://www.ul.com">www.ul.com</a>
<b>WDMA</b> Window and Door Manufacturers Association
1400 East Touhy Avenue, Suite 470
Des Plaines, IL 60018
<a href="http://www.wdma.com">www.wdma.com</a>

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850

CHAPTER 10

INSTALLER AND THIRD PARTY QUALIFICATIONS

SECTION 1001

GENERAL

(Reserved)

SECTION 1002  
QUALIFICATIONS

(Reserved)

SECTION 1003  
VERIFICATIONS

(Reserved)

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850





<b><u>GREEN BUILDING MEASURE</u></b>	<b><u>REQUIRED</u></b>	<b><u>OPTIONAL</u></b>	<b><u>REQUIRED 3<sup>RD</sup> PARTY VERIFICATION</u></b>
<u>a ten-year cycle for at least 2.5% of total materials value, based on estimated cost.</u>			
<b><u>705.3 Reused materials.</u></b> Use salvaged, refurbished, refinished, or reused materials for at least 5% of the total value, based on estimated cost of materials on the project.		<input type="checkbox"/>	
<b><u>705.4 Recycled content.</u></b> Use materials, equivalent in performance to virgin materials, with post-consumer or pre-consumer recycled content value (RCV) equaling at least 10% of the total value, based on estimated cost of materials on the project..		<input type="checkbox"/>	
<b><u>ENHANCE DURABILITY AND REDUCED MAINTENANCE (706)</u></b>			
<b><u>706.1.1 Service life.</u></b> Select materials for longevity and minimal deterioration under conditions of use.		<input type="checkbox"/>	
<b><u>706.1.2 Reduced maintenance.</u></b> Select materials that require little, if any, finishing.		<input type="checkbox"/>	
<b><u>706.1.3 Recyclability.</u></b> Select materials that can be re-used or recycled at the end of their service life.		<input type="checkbox"/>	
<b><u>WEATHER RESISTANCE AND MOISTURE MANAGEMENT (707)</u></b>			
<b><u>707.2 Moisture control.</u></b> Employ moisture control measures by one of the following methods:			
<b><u>707.2.1 Sprinklers.</u></b> Prevent irrigation spray on structures.		<input type="checkbox"/>	
<b><u>707.2.2 Entries and openings.</u></b> Design exterior entries and openings to prevent water intrusion into buildings.		<input type="checkbox"/>	
<b><u>CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING (708)</u></b>			
<b><u>708.1 Construction waste diversion.</u></b> Establish a construction waste management plan or meet local ordinance, whichever is more stringent.		<input type="checkbox"/>	
<b><u>708.3 Construction waste.</u></b> Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris. <b><u>Exceptions:</u></b> 1. <u>Excavated soil and land-clearing debris.</u> 2. <u>Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.</u>		<input type="checkbox"/>	
<b><u>708.4 Excavated soil and land clearing debris.</u></b> 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled.		<input type="checkbox"/>	
<b><u>LIFE CYCLE ASSESSMENT (709)</u></b>			
<b><u>709.1 Materials and system assemblies.</u></b> Select materials assemblies based on life cycle assessment of their embodied energy and/or		<input type="checkbox"/>	



<b><u>GREEN BUILDING MEASURE</u></b>	<b><u>REQUIRED</u></b>	<b><u>OPTIONAL</u></b>	<b><u>REQUIRED 3<sup>RD</sup> PARTY VERIFICATION</u></b>
<p><u>least one of the following.</u></p> <ol style="list-style-type: none"> <li>1. <u>Mill certifications and specifications.</u></li> <li>2. <u>Chain of custody certifications.</u></li> <li>3. <u>Other methods acceptable to the enforcing agency.</u></li> </ol> <p><b>804.4.5 Resilient flooring systems.</b> <u>Comply with the VOC-emission limits defined in the CHPS Low-emitting Materials List.</u></p> <p><b>804.4.6 Thermal Insulation.</b> <u>Comply with Chapter 12-13 in Title 24, Part 12 and with the VOC-emission limits defined in CHPS Low-emitting Materials List.</u></p> <p><b>804.4.7 Acoustical ceilings and wall panels.</b> <u>Comply with Chapter 8 in Title 24, Part 2 and with the VOC-emission limits defined in the CHPS Low-emitting Materials List</u></p>		<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>	
<p><b>804.5 Hazardous particulates and chemical pollutants.</b> <u>Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.</u></p> <p><b>804.5.1 Entryway systems.</b> <u>Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in 804.5.1.</u></p>		<input type="checkbox"/>	
<p><b>804.7 Environmental tobacco smoke (ETS) control.</b> <u>Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings by either Section 804.4.1 or 804.4.2; or as enforced by local ordinances, regulations, or policies, whichever are more stringent.</u></p>		<input type="checkbox"/>	
<p><b><u>INDOOR MOISTURE AND RADON CONTROL (805)</u></b></p>			
<p><b>805.1 Indoor moisture control.</b> <u>Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.</u></p>		<input type="checkbox"/>	
<p><b><u>ENVIRONMENTAL COMFORT (807)</u></b></p>			
<p><b>807.5 Acoustical control.</b> <u>Employ building assemblies and components with STC values determined in accordance with ASTM E90 and ASTM E413.</u></p> <p><b>807.5.1 Exterior noise transmission.</b> <u>Wall and floor-ceiling assemblies making up the building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for any of the building locations listed in Items 1 through 3 in 807.5.1.</u></p> <p><b>807.5.2 Interior sound.</b> <u>Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 50.</u></p>		<input type="checkbox"/>   <input type="checkbox"/>   <input type="checkbox"/>	

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850



## APPENDIX A

### COMMENTARY OF ADDITIONAL DESIGN CONSIDERATIONS

#### SECTION A101 GENERAL

**A101.1 Scope.** The measures contained in this appendix are not mandatory and provide additional considerations which designers, builders, and property owners may wish to consider during the planning, design and construction process.

#### SECTION A201 DEFINITIONS

**A201.1 Scope.** Unless otherwise stated, the words and terms used in this appendix shall, for the purposes of this chapter, have the meanings shown in this code.

#### SECTION A301 GREEN BUILDING

**A301.1 Scope.** Buildings shall be designed to include the green building measures specified as mandatory in the application worksheets contained in Chapter 11 of this code. Optional green building measures may be included but are not required. Additional considerations which designers, builders, and property owners may wish to consider during the planning, design and construction process are contained in this appendix.

#### SECTION A401 PLANNING AND DESIGN

**401.1 Purpose.** The provisions of this chapter 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.

##### A402.1 Definitions.

**BIORETENTION.** A shallow depression that utilizes conditioned soil and vegetation for the storage, treatment, or infiltration of storm water runoff.

**LOW-EMITTING AND FUEL EFFICIENT VEHICLES.** Eligible vehicles are limited to the following:

1. Zero emission vehicle (ZEV), partial zero emission vehicle (PZEV), alternate technology PZEV (AT ZEV), or CNG fueled (Original equipment manufacturer only) regulated under Health and Safety Code section 43800 and CCR, Title 13, sections 1961 and 1962.
2. High efficiency vehicles, regulated by US EPA, bearing Single-Occupant Vehicle (SOV) car pool lane stickers issued by the Department of Motor Vehicles.

##### A403.1 Site Selection. (Reserved)

##### A404.1 Site Preservation. (Reserved)

##### A405.1 Deconstruction and Reuse of Existing Structures.

**A405.1.1** If feasible, disassemble existing buildings instead of demolishing to allow reuse or recycling of building materials.

**A405.1.2 Existing building structure.** Maintain at least 75% of existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing) based on surface area.

##### Exceptions:

1. Window assemblies and non-structural roofing material.
2. Hazardous materials that are remediated as a part of the project.
3. A project with an addition of more than 2 times the square footage of the existing building.

**A405.1.3 Existing non-structural elements.** Reuse existing interior non-structural elements (interior walls, doors, floor coverings and ceiling systems) in at least 50% of the area of the completed building (including additions).

**Exception:** A project with an addition of more than 2 times the square footage of the existing building.

Salvage additional items in good condition such as light fixtures, plumbing fixtures, and doors for reuse on this project in an onsite storage area or for salvage in dedicated collection bins. Document the weight or number of the items salvaged.

...

**A406.1.3 Storm water design.** Design storm water runoff rate and quantity in conformance with Section 406.3.1 and storm water runoff quality by Section 406.3.2, or by local requirements, whichever are stricter.

**A406.1.3.1 Storm water runoff rate and quantity.** Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions.

**Exception:** If the site is already greater than 50% impervious, implement a storm water management plan resulting in a 25% decrease in rate and quantity.

**A406.1.3.2 Storm water runoff quality.** Use post construction treatment control best management practices to mitigate (infiltrate, filter, or treat) storm water runoff from the 85<sup>th</sup> percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85<sup>th</sup> percentile hourly intensity (for flow-based BMPs).

**A406.1.3.3 Parking lots.** Use depressed planter areas and curb cuts to allow for drainage into the planter areas or utilize other specified bioretention techniques.

**A406.1.4 Bicycle storage and changing rooms.** Provide secure racks or storage for bicycles for a minimum of 10% of parking capacity, with 3% or more being long-term storage. Provide changing/shower facilities, or document arrangements with nearby changing/shower facilities.

**A406.1.5 Fuel efficient vehicles.** Purchasing policy and refueling sites for low emitting vehicles for state employees use can be found at: <http://www.ofa.dgs.ca.gov/NR/exeres/BEAD98C9-035D-4229-8C90-3D47BD5D81FF.htm> , Management Memo MM 06-03.

**A406.1.5.1 Designated parking.** Provide designated parking for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as follows:

**Table A406.1.5.1**

<b>Total Number of Parking Spaces</b>	<b>Number of Required Spaces</b>
10-25	2
26-50	4
51-75	6
76-100	8
101-150	11
151-200	16
201 and over	At least 8% of total

**A406.1.5.1.1 Vehicle designations.** Building managers may consult with local community Transit Management Associations (TMAs) for methods of designating qualifying vehicles, such as issuing parking stickers.

**A406.1.5.1.2 Additional resources.** Information on qualifying vehicles, car labeling regulations, and DMV SOV stickers may be obtained from the following sources:

1. California DriveClean, [www.driveclean.ca.gov](http://www.driveclean.ca.gov)
2. California Air Resources Board, [www.arb.ca.gov/msprog/ccvl/ccvl.htm](http://www.arb.ca.gov/msprog/ccvl/ccvl.htm)
3. US EPA fuel efficiency standards, [www.fueleconomy.gov](http://www.fueleconomy.gov)
4. Janet Okino, DMV Registration Operations, (916) 657 6678, and John Swanton, ARB Public Information, (626) 575-6858.

**A406.1.5.2 Electric vehicle charging.** Provide facilities meeting Section 406.7 of the California Building Code and as follows:

**406.1.5.2.1 Electric vehicle supply wiring.** For each space required in Table A406.1.5.2, provide one conductive, 120 VAC 20 Amp, grounded AC outlet or panel capacity and conduit installed for future outlet.

**Table A406.1.5.2**

<b>Total Number of Parking Spaces</b>	<b>Number of Required Spaces</b>
1-50	1
51-200	2
201 and over	4

**A406.1.6 Parking capacity.** Design parking capacity to meet but not exceed minimum local zoning requirements.

**A406.1.6.1 Reduce parking capacity.** With the approval of the enforcement authority, employ strategies to reduce on site parking area by

1. Use of on street parking or compact spaces, illustrated on the site plan, or
2. Implementation and documentation of programs that encourage occupants to carpool, ride share, or use alternate transportation. Strategies for programs may be obtained from local (TMAs).

Notation

**Authority:** Health & Safety Code §1226, 1275, 129790 & 129850 and Government Code §11152.5

**Reference:** Health & Safety Code §1226, 1275, 129790 & 129850