

Green California Summit and Exposition Presents

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CAL Green®

Nonresidential Commissioning



Introduction

Enrique M. Rodriguez

Associate Construction Analyst

California Building Standards Commission

(916) 263-0916

enrique.rodriquez@dgs.ca.gov



Today's Objectives

- Current CALGreen Commissioning (CX)
- 2013 CALGreen CX
 - Effective January 1, 2014



California Green Building Standards Code

Nonresidential Mandatory Measures

Chapter 5:

- Planning and Design – Division 5.1
- Energy Efficiency – Division 5.2
- Water Efficiency and Conservation – Division 5.3
- *Material Conservation and Resource Efficiency – Division 5.4**
- Environmental Quality – Division 5.5
- Additions and Alterations – Division 5.7

Effective July 1, 2012



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4 Building Maintenance and Operation

Commissioning: For new buildings 2013 CALGreen
10,000 square feet and over:

Owner's or Owners Representative's
Project Requirements (OPR)
Basis of Design (BOD)
Commissioning measures shown in the
construction documents
Commissioning plan
Functional performance testing
Documentation and training
Commissioning report

Exceptions:

- *Dry warehouse*
- *Some tenant improvements*

- Clarifies requirements for New construction only
- *Note:* All energy related requirements for Commissioning, OPR & BOD now have a referenced to the Energy Code



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4 Building Maintenance and Operation

Current

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:

Environmental and Sustainability Goals.

Energy Efficiency Goals.

Indoor Environmental Quality Requirements.

Project program, including facility functions and hours of operation, and need for after hours operation

Equipment and Systems Expectations.

Building occupant and operation and maintenance (O&M) Personnel Expectations.

2013 CALGreen

- No Change

- Note: All energy related requirements for Commissioning, OPR & BOD now have a referenced to the Energy Code



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4 Building Maintenance and Operation

Basis of Design (BOD):

Heating, ventilation, air conditioning
(HVAC) systems and controls
Indoor lighting system and controls
Water heating system
Renewable energy systems
Landscape irrigation systems
Water reuse systems

2013 CALGreen

- No change
- Note: All energy related requirements for Commissioning, OPR & BOD now have a referenced to the Energy Code



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4

Building Maintenance and Operation

Commissioning plan:

Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The Commissioning Plan shall include the following:

General project information

Commissioning goals

Systems to be commissioned. Plans to test systems and components shall include:

- a. An 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

Commissioning team information

Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included

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- No change



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4 Building Maintenance and Operation

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.

Documentation and training. A Systems Manual and Systems Operations Training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 514, and other related regulations.

2013 CALGreen

- No change



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4 Building Maintenance and Operation

Systems manual:

Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner or representative.

The Systems Manual shall include the following:

Site information, including facility description, history and current requirements

Site contact information

Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log

Major systems

Site equipment inventory and maintenance notes

A copy of verifications required by the enforcing agency or this code

Other resources and documentation if applicable

2013 CALGreen

- No change



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4

Building Maintenance and Operation

Systems operations training:

A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:

System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces)

Review and demonstration of servicing/preventive maintenance

Review of the information in the Systems Manual

Review of the record drawings on the system/equipment

Commissioning report. A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.

Note: Guidance on implementation and enforcement of commissioning requirements, including sample compliance forms and templates, may be found in Appendix A6, Division A6.1, of this code.

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- No change

- Appendix A6 was repealed (CX Reference Standard)



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4 Building Maintenance and Operation

Testing and adjusting:

Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.

Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include, as applicable to the project:

HVAC systems and controls

Indoor and outdoor lighting and controls

Water heating systems

Renewable energy systems

Landscape irrigation systems

Water reuse systems

2013 CALGreen

- ***New section:*** Clarifies requirements for new buildings or new systems to serve additions or alterations



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY –

Chapter 5- Division 5.4 Building Maintenance and Operation

Procedures:

Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable national standards on each system.

2013 CALGreen

- No change

HVAC balancing:

In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; or Associated Air Balance Council National Standards or as approved by the enforcing agency.

- No change



MATERIAL CONSERVATION AND RESOURCE EFFICIENCY – Chapter 5- Division 5.4 Building Maintenance and Operation

Reporting:

After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

Operation and maintenance manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O&M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 514, and other related regulations.

Inspections and reports. Include a copy of all special inspection verifications and reports required by the enforcing agency.

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- No change
- No change
- No change



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ADOPTED

2013 CODE
TRIENNIAL EDITIONPUBLICATION DATE: JUL 1, 2013
EFFECTIVE DATE: JAN 1, 2014

California's building codes (California Code of Regulations, Title 24) are published on a triennial basis. The CBSC is responsible for the administration and implementation of each code cycle, which includes the proposal, review and adoption processes.

Supplements and errata are issued throughout the cycle. Review the [current code cycle](#) timeline here. The 2013 code is scheduled to go into effect in January 2014. For more information about the code cycle and the regulatory processes review the information available throughout this website. Click [here](#) for helpful tips on how to navigate the CBSC web pages.

The 2010 codes, which remain in effect through 2013 are available online both on this website and on the submitting agencies websites:

Residential Construction: California Department of Housing and Community Development, www.hcd.ca.gov

Access Compliance: California Department of General Services, Division of the State Architect, <http://www.dgs.ca.gov/dsa/Programs/progCodes.aspx>

School Construction: California Department of General Services, Division of the State Architect, www.dgs.ca.gov/dsa

Hospitals and Clinic Construction: California Office of Statewide Health Planning and Development, www.oshpd.ca.gov

Fire and Panic Safety: Office of the State Fire Marshal, www.osfm.fire.ca.gov

Need to purchase copies of the code?

California's building codes are published by the International Code Council (ICC), with the exception of the Plumbing and Mechanical codes, and may be purchased directly from the council. Visit the online store at www.iccsafe.org, or call 800-786-4452 for order information. The plumbing and mechanical codes may be purchased via the International Association of Plumbing and Mechanical Officials (IAPMO) website, www.iapmo.org, or call (909) 472-4208 for order information.

Commission meetings are webcast at www.dca.ca.gov/stream/audiocast.aspx. The link is active five (5) minutes prior to meeting start times. Please be aware of the approximate sixty (60) second delay in the webcast when commenting on an agenda item via teleconference.



Thank you...

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