

**15-DAY EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
CALIFORNIA BUILDING STANDARDS COMMISSION (CBSC)**

**REGARDING ADOPTION OF AMENDMENTS TO 2008 CALIFORNIA BUILDING STANDARDS CODE,
TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR), PARTS 2, 3, 4, 5 and 6 IN TITLE 24, CCR,
PART 11, 2010 CALIFORNIA GREEN BUILDING STANDARDS CODE**

Legend for Express Terms:

1. **New California amendment (CA):** California language will appear underlined.
2. **Amended, adopted, or repealed language:** Amended, adopted, or repealed language will appear in double underline and ~~double-strikeout~~.
3. **Rationale:** The justification for the change is shown after each section or series of related changes.
4. **Notation:** Authority and reference citations are provided at the end of each chapter.

**SECTION 740 5.410
BUILDING MAINTENANCE AND OPERATION**

504.4 5.410.2 Commissioning. For new buildings 10,000 square feet and over, 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 or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity trained and certified in commissioning by a nationally recognized organization. Commissioning requirements shall include as a minimum:

1. Owner's or Owner representative'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.

504.4.4 5.410.2.1 Owner's or Owner representative's Project Requirements (OPR). The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. ~~At a minimum,~~ This documentation shall include the following: . . .

504.4.2 5.410.2.2 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: . . .

4. Project program, including facility functions and hours of operation, and need for after hours operation.
5. Equipment and Systems Expectations.
6. Building Occupant and O&M Personnel Expectations.

504.4.3 5.410.2.3 Commissioning plan. Prior to permit issuance a ~~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. An ~~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 A5.410.4.4 through A5.410.4.6 shall be included.

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504.4.5 5.410.2.5 Post-construction Documentation and training. A Systems Manual and Systems Operations Training are required.

~~504.4.5.1~~ **5.410.2.5.1 Systems manual.** Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner or representative. ~~At a minimum, the~~ The Systems Manual shall include the following:

1. Site Information, including facility description, history and current requirements, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations.
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. A copy of all special inspection verifications required by the enforcing agency or this code.
7. Other Resources & Documentation.

~~504.4.5.2~~ **5.410.2.5.2 Systems operations training.** The training of the appropriate maintenance staff for each equipment type and/or system shall be documented in the commissioning report and 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 and demonstration of servicing/preventive maintenance.
3. Review of the information in the Systems Manual.
4. Review of the record drawings on the system/equipment.

504.4.6 5.410.2.6 Commissioning report. A complete report of commissioning process activities undertaken through the design, and construction and reporting recommendations for post-construction phases of the building project shall be completed and provided to the owner or representative.

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

5.410.3.2 Systems. Develop a written plan of procedures for testing, and adjusting and balancing systems. Systems to be included for testing, and adjusting and balancing shall include ~~at a minimum,~~ as applicable to the project. . . .

5.410.3.3 Procedures. Perform testing, and adjusting and balancing procedures in accordance with industry best practices and applicable ~~national~~ standards on each system as determined by the building official.

5.410.3.3.1 HVAC balancing. In addition to testing and adjusting, ~~Before~~ a new space-conditioning system serving a building or space is operated for normal use, the system ~~should~~ shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards (2003); the National Environmental Balancing Bureau Procedural Standards (1983); or Associated Air Balance Council National Standards (1989) or as approved by the building official.

5.410.3.4 Operation and maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system ~~prior to final inspection.~~ O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

5.410.3.5.1 Special Inspections and reports. Include a copy of all ~~special~~ inspection verifications and reports required by the enforcing agency ~~or this code.~~

Recommendation:

Based on criteria 4 & 6, CBSC proposes to delete “nationally recognized organization” for personnel certification and standards. CBSC proposes to remove all references to “at a minimum”. CBSC proposes an Owner representative as one with authority for expectations and requirements for the project as well as representation for the Owner during the commissioning process. CBSC proposes to reduce requirements for detail and specificity in plans and reports, but makes a reference to CCR, Title 8 as required for building systems generally. CBSC also proposes an editorial change to relocate the dates in Section 5.410.3.3.1 to Chapter 6.

Rationale:

In response to a public comment, clarify for the code user that training and certification of commissioning personnel and standards may be recognized by other than a national organization, such as state or local. Removal of the phrase “at a minimum”, including an Owner representative as one with authority, and giving the enforcement authority flexibility in the level of detail and specificity required are intended to facilitate local enforcement of these standards, while recognizing a need for consistency across related regulations.

Notation:

Authority – Health and Safety Code Sections 18930.5, 18934.5 and 18938 (b).

Reference – Health and Safety Code, Division 13, Part 2.5, commencing with Section 18901.