

**FINAL EXPRESS TERMS
FOR
PROPOSED BUILDING STANDARDS
OF THE
CALIFORNIA BUILDING STANDARDS COMMISSION**

**REGARDING THE ADOPTION OF THE 2012 INTERNATIONAL BUILDING CODE (IBC) FOR USE AS
THE 2013 CALIFORNIA BUILDING CODE (CBC),
TITLE 24, PART 2, CALIFORNIA CODE OF REGULATIONS (CCR)**

LEGEND FOR EXPRESS TERMS

1. Existing California amendments or code language being modified, as well as selected terms set forth in Chapter 2, Definitions are in italics when they appear in the model code text, independent of state amended definitions: All such language appears in *italics*, modified language is underlined.
2. New California amendments: All such language appears underlined and in italics.
3. Repealed text: All such language appears in ~~strikeout~~.

The Building Standards Commission (BSC) proposes to adopt the 2012 edition of the International Building Code (IBC) for codification and effectiveness into the 2013 edition of the California Building Code (CBC) as presented on the following pages, including any necessary amendments. BSC further proposes to:

- Repeal the 2009 edition of the IBC and the 2010 CBC;
- Repeal amendments to the model code that are no longer necessary, repeal or amend building standards that are not addressed by a model code;
- Relocate or codify existing adopted and necessary amendments to the model code into the format of the model code proposed for adoption, the action of which has no regulatory effect; adopt new necessary amendments to the model code proposed for adoption; and/or
- Adopt new building standards that are not addressed by the model code proposed for adoption

PART I: REPEALS, ADOPTIONS AND NEW AMENDMENTS

(See page 12 for Part II: Existing amendments carried forward...)

CHAPTER 1

SCOPE AND ADMINISTRATION

DIVISION I

CALIFORNIA ADMINISTRATION

CBSC proposes to amend the section below

NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

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1.1.3.2 State-Regulated Buildings, Structures, and Applications. *The model code, state amendments to the model code, and/or state amendments where there are no relevant model code provisions, 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 1.2 through 1.14, except where modified by local ordinance pursuant to Section 1.1.8. 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.*

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1.1.11 Format. *This part fundamentally adopts the International Building Code by reference on a chapter-by-chapter basis. Such adoption is reflected in the Matrix Adoption Table of each chapter of this part. When the Matrix Adoption Tables make no reference to a specific chapter of the International Building Code such chapter of the International Building Code is not adopted as a portion of this code. When a specific chapter of the International Building Code is not printed in the code and is marked "Reserved", such chapter of the International Building Code is not adopted as a portion of this code. When a specific chapter of the International Building Code is marked "Not adopted by the State of California" but appears in the code, it may be available for adoption by local ordinance.*

Note: *Matrix Adoption Tables at the front of each chapter may aid the code user in determining which chapter or sections within a chapter are applicable to buildings under the authority of a specific state agency, but they are not to be considered regulatory.*

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DIVISION II SCOPE AND ADMINISTRATION

CBSC proposes to not adopt Chapter 1 of the 2012 IBC

Note: *Sections adopted or amended by state agencies are specifically indicated by an agency banner or identified shown in the Matrix Adoption Table.*

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Notation

Authority: Health and Safety Code §18934.5

References: Health and Safety Code §18934.5

CHAPTER 2 DEFINITIONS

CBSC proposes to adopt 2012 IBC chapter 2 with amendments

(Moved from Chapter 34 2010 CBC)

RETROFIT *is the construction of any new element or system, or the alteration of any existing element or system required to bring an existing building, or portion thereof, conforming to earlier code requirements, into conformance with standards of the currently effective California Building Standards Code.*

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 3 USE AND OCCUPANCY CLASSIFICATION

CBSC proposes to adopt 2012 IBC chapter 3 without amendments

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED UPON USE AND OCCUPANCY

CBSC proposes to adopt 2012 IBC chapter 4 without amendments

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 5
GENERAL BUILDING HEIGHT AND AREA
CBSC proposes to adopt 2012 IBC chapter 5 without amendments**

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 6
TYPES OF CONSTRUCTION
CBSC proposes to adopt 2012 IBC chapter 6 without amendments**

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 7
FIRE-RESISTANCE-RATED-CONSTRUCTION
CBSC proposes to adopt 2012 IBC chapter 7 without amendments**

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 8
INTERIOR FINISHES
CBSC proposes to adopt 2012 IBC chapter 8 without amendments**

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 9
FIRE PROTECTION SYSTEMS
CBSC proposes to adopt 2012 IBC chapter 9 without amendments**

Notation
Authority: Health and Safety Code §18928 & 18934.5
References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 10 MEANS OF EGRESS

CBSC proposes to adopt 2012 IBC chapter 10 without amendments

Notation
Authority: Health and Safety Code §18928 & 18934.5
References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 11 OF THE 2012 IBC IS NOT ADOPTED BY THE STATE OF CALIFORNIA

Notation
Authority: Health and Safety Code §18928 & 18934.5
References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 12 INTERIOR ENVIRONMENT

CBSC proposes to repeal existing amendments shown below and adopt 2012 IBC chapter 12 without new amendments

NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

(Incorporated in 2012 model code)

~~**1203.2 Attic spaces.** Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof framing members shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain and snow. Blocking and bridging shall be arranged so as not to interfere with the movement of air. A minimum of 1 inch (25 mm) of airspace shall be provided between the insulation and the roof sheathing. The net free ventilating area shall not be less than 1/300 of the area of the space ventilated, with 50 percent of the required ventilating area provided by ventilators located in the upper portion of the space to be ventilated at least 3 feet (914 mm) above eave or cornice vents with the balance of the required ventilation provided by eave or cornice vents.~~

~~**[BSC] Exception:** Attic ventilation shall not be required when determined not necessary by the building official due to atmospheric or climatic conditions.~~

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Notation
Authority: Health and Safety Code §18928 & 18934.5
References: Health and Safety Code §§18928, 18928.1, 18934.5 & 18938(b)

CHAPTER 13 OF THE 2012 IBC IS NOT ADOPTED BY THE STATE OF CALIFORNIA

Notation
Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 14 EXTERIOR WALLS

CBSC proposes to adopt 2012 IBC chapter 14 without amendments

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 15 ROOF ASSEMBLIES AND ROOF TOP STRUCTURES

CBSC proposes to adopt 2012 IBC chapter 15 with amendments

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1509.7.1 Wind resistance. Rooftop mounted photovoltaic systems shall be designed for wind loads for component and cladding in accordance with Chapter 16 using an effective wind area based on the dimensions of a single unit frame.

Exception: [BSC] *The effective wind area shall be in accordance with Chapter 16 and ASCE 7 Section 26.2.*

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTERS 16 STRUCTURAL DESIGN

CBSC proposes to repeal existing amendments shown below and adopt 2012 IBC chapter 16 with new amendments

NOTE: *See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC*

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1613.5 Modifications to ASCE 7. *The text of ASCE 7 shall be modified as indicated in Sections 1613.5.1 through 1613.5.2.*

1613.5.1 Modify ASCE 7 DEFINITIONS as follows:

1.2 DEFINITIONS.

BALLASTED PHOTOVOLTAIC SYSTEM: *A roof mounted system composed of solar photovoltaic panels and supporting members that are unattached or partially attached to the roof and must rely on its weight, aerodynamics and friction to counter the effect of wind and seismic forces.*

1613.5.2 Modify ASCE 7 Section 13.4 as follows:

Section 13.4 NONSTRUCTURAL COMPONENT ANCHORAGE.

Components and their supports shall be attached (or anchored) to the structure in accordance with the requirements of this section and the attachment shall satisfy the requirements for the parent material as set forth

elsewhere in this standard. Component attachments shall be bolted, welded, or otherwise positively fastened without consideration of frictional resistance produced by the effects of gravity. A continuous load path of sufficient strength and stiffness between the component and the supporting structure shall be provided. Local elements of the structure including connections shall be designed and constructed for the component forces where they control the design of the elements or their connections. The component forces shall be those determined in Section 13.3.1, except that modifications to F_p and R , due to anchorage conditions need not be considered. The design documents shall include sufficient information relating to the attachments to verify compliance with the requirements of this section

Exception: *Ballasted photovoltaic systems when approved by the enforcing agency.*

...
(Incorporated in 2012 model code Reference Standard ASCE 7-10)

~~1613.6.9. Exceptions for nonstructural components. [BSC] Replace ASCE 7 Section 13.1.3 by the following items:~~

~~Exemptions:~~ *The following nonstructural components are exempt from the requirements of this section:*

- ~~1. Furniture (except storage cabinets as noted in Table 13.5-1).~~
- ~~2. Temporary or moveable equipment.~~
- ~~3. Architectural components in Seismic Design Category B other than parapets supported by bearing walls or shear wall, provided that the component importance factor, I_p , is equal to 1.0.~~
- ~~4. Mechanical and electrical components in Seismic Design Category B.~~
- ~~5. Mechanical and electrical components in Seismic Design Category C, provided that the component importance factor, I_p , is equal to 1.0.~~
- ~~6. Mechanical and electrical components in Seismic Design Categories D, E or F where all of the following apply:~~
 - ~~a. The component importance factor, I_p , is equal to 1.0;~~
 - ~~b. The component is positively attached to the structure;~~
 - ~~c. Flexible connections are provided between the component and associated ductwork, piping, and conduit; and either:~~
 - ~~i. The component weighs 400 lb (1780 N) or less and has a center of mass located 4 ft. (1.22 m) or less above the adjacent floor level; or~~
 - ~~ii. The component weighs 20 lb (89 N) or less, or, in the case of a distributed system, 5 lb/ft (73N/m) or less.~~

...
(Incorporated in 2012 model code Ref. Standard ASCE 7-10)

~~1613.6.10 Exceptions for nonstructural components. [BSC] Replace items 4 and 5 of ASCE 7 Section 13.1.4 by the following items:~~

- ~~4. Mechanical and electrical components in Seismic Design Categories D, E or F where all of the following apply:~~
 - ~~a. The component importance factor, I_p , is equal to 1.0;~~
 - ~~b. The component is positively attached to the structure;~~
 - ~~c. Flexible connections are provided between the component and associated ductwork, piping, and conduit; and either:~~
 - ~~i. The component weighs 400 lb (1780 N) or less and has a center of mass located 4 ft. (1.22 m) or less above adjacent floor level.~~
 - ~~ii. The component weighs 20 lb (89 N) or less, or, in the case of a distributed system, 5 lb/ft (73N/m) or less.~~

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTERS 17
STRUCTURAL TESTS AND SPECIAL INSPECTIONS
CBSC proposes to adopt 2012 IBC chapter 17 with amendments.**

NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTERS 18
SOILS AND FOUNDATIONS
CBSC proposes to repeal existing amendments shown below and adopt 2012 IBC chapter 18 without new amendments**

NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

(Incorporated in 2012 model code)

1803.5.12 Seismic Design Categories D through F. For structures assigned to *Seismic Design Category D*,...

...

~~2. [BSC] The determination of lateral earth pressures on foundation walls supporting more than 6 feet of backfill height, due to earthquake motions.~~

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTERS 19
CONCRETE
CBSC proposes to repeal existing amendments shown below and adopt 2012 IBC chapter 19 without new amendments**

NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

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(Renumbered in 2012 CBC, 1905.1.2 ACI 318, Section 21.1.1)

1908.1.2 ACI 318, Section 21.1.1 Modify ACI 318 Section . . .

21.1.1.7 - Structural systems designated as part of the seismic-force-resisting system shall be restricted to those permitted by ASCE 7. . . .

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~~(h) [BSC] In Seismic Design Category D, E or F, concrete tilt-up wall panels which exceed the limitations of intermediate precast structural wall system shall satisfy 21.9 in addition to 21.4.2. and 21.4.3.~~

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(Incorporated into 2012 model code)
(Renumbered in 2012 CBC 1905.1.3 ACI 318, Section 21.4)

1908.1.3 ACI 318, Section 21.4 Modify ACI318, Section 21.4, by renumbering Section ...

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~~21.4.5 [BSC] Wall piers in Seismic Design Category D, E or F shall comply with Section 1908.1.4 of the Code.~~

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(Renumbered in 2012 CBC, 1905.1.9 ACI 318, Section D3.3)

~~**1908.1.9.1 ACI 318, Section D3.3. [BSC]** Modify ACI 318, Section D3.3.1 and add Section D.3.3.7 to read as follows:~~

~~D3.3.1—The provisions of Appendix D do not apply to the design of anchors in plastic hinge zones of concrete structures under earthquake forces or anchors defined in Section D3.3.7.~~

~~D3.3.7—For anchors of wood sill plates with nominal diameters not exceeding 5/8 in. (15.9 mm) with embedment of 7 in. (178 mm) or greater, located a minimum of 2.5d from edge of concrete and 15d from end of concrete, design strength in shear parallel to edge of concrete shall be permitted to be determined in accordance with Section 2305.~~

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CHAPTERS 21, 22

CBSC proposes to adopt 2012 IBC chapter 21, 22 without amendments

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 23 WOOD

CBSC proposes to repeal existing amendments shown below and adopt 2012 IBC chapter 23 without new amendments

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~~**2305.1.4 Sill plate anchor bolts.** [BSC] As specified in Section 1908.1.31 modifications to ACI 318, the allowable lateral design strength for sill plate anchor bolts in shear parallel to grain is permitted to be determined using the lateral design value for a bolt attaching a wood sill plate to concrete, as specified in AF&PA NDS Table 11E, provided the anchor bolts comply with all of the following:~~

- ~~1. Two maximum anchor diameter 5/8" inches (16 mm).~~
- ~~2. The anchor bolt is embedded at least 7 inches (178 mm) into concrete.~~
- ~~3. The anchor bolt is located a minimum of 2 1/2 anchor diameters from any concrete edge that is parallel to the sill plate; and~~
- ~~4. The anchor bolt is located a minimum of 15 anchor diameters from any concrete end that is perpendicular to the sill plate.~~

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NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTERS 24, 25, 26
CBSC proposes to adopt 2012 IBC chapter 24, 25, 26 without amendments.

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 27
ELECTRICAL
CBSC proposes to not adopt 2012 IBC chapter 27

Refer to California Electrical Code, Title 24, Part 3

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 28
MECHANICAL SYSTEMS
CBSC proposes to not adopt 2012 IBC chapter 28

Refer to California Mechanical Code, Title 24, Part 4

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 29
PLUMBING SYSTEMS
CHAPTER 29 OF THE 2012 IBC IS NOT ADOPTED BY THE STATE OF CALIFORNIA

Refer to California Plumbing Code, Title 24, Part 5

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 30
ELEVATORS AND CONVEYING SYSTEMS
CBSC proposes to adopt 2012 IBC chapter 30 without amendments.

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 31
SPECIAL CONSTRUCTION
CBSC proposes to adopt 2012 IBC chapter 31 without new amendments.**

NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

Notation
Authority: Health and Safety Code §18928 & 18934.5
References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 32
ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY**

CBSC proposes to adopt 2012 IBC chapter 32 without amendments.

Notation
Authority: Health and Safety Code §18928 & 18934.5
References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 33
SAFEGUARDS DURING CONSTRUCTION
CBSC proposes to adopt 2012 IBC chapter 33 without amendments.**

Notation
Authority: Health and Safety Code §18928 & 18934.5
References: Health and Safety Code §§18928, 18928.1, & 18934.5

**CHAPTER 34
EXISTING STRUCTURES**

CBSC proposes to repeal existing amendments shown below and adopt 2012 IBC chapter 34 new amendments

NOTE: See Part II at the end of this document for existing California Amendments proposed to be carried forward from the 2010 CBC for adoption into 2013 CBC

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3419.1 Basis for evaluation and design.

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Exceptions:

1. **[BSC]** For buildings constructed to the requirements of California Building Code, 1998 or later edition as adopted by the governing jurisdiction, that code is permitted to be used in place of those specified in Section 3419.1.
2. **Reserved for DSA**

3402.1 Definitions. The following terms are defined in Chapter 2:

DANGEROUS.

EXISTING STRUCTURE.

PRIMARY FUNCTION.

SUBSTANTIAL STRUCTURAL DAMAGE.

TECHNICALLY INFEASIBLE.

~~(Relocated to Chapter 2) **RETROFIT** is the construction of any new element or system, or the alteration of any existing element or system required to bring an existing building, or portion thereof, conforming to earlier code requirements, into conformance with standards of the currently effective California Building Standards Code.~~

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3417.3.1

3417.5 Minimum seismic design performance levels for structural and nonstructural components.

Following the notations of ASCE 41, the seismic requirements for design and assessment are based upon a prescribed Earthquake Hazard Level (BSE-1, BSE-2, BSE-R or BSE-C), a specified structural performance level (S-1 through S-5) and a non-structural performance level (N-A through N-E). The minimum seismic performance criteria are given in Table 3417.5 according to the Building Regulatory Authority and the ~~Occupancy Risk~~ Category as determined in Chapter 16 or by the regulatory authority. The building shall be evaluated at both the Level 1 and Level 2 performance levels, and the more restrictive requirements shall apply.

Basic Safety Earthquake 2 (BSE-2) in ASCE 41 shall be same as Risk-Targeted Maximum Considered Earthquake (MCER) in ASCE 7. Probabilistic response spectra defining other Earthquake Hazard Levels shall be developed using site-specific ground motions in accordance with ASCE 7 Section 21.2 utilizing the Next Generation Attenuation (NGA) relations used for the 2008 USGS seismic hazards maps for Western United States (WUS). When supported by data and analysis, other NGA relations, that were not used for the 2008 USGS maps, shall be permitted as additions or substitutions. No fewer than three NGA relations shall be utilized. Response spectra shall incorporate the risk coefficient C_R per ASCE 7 Section 21.2.1.1

Ground-motion response history analysis shall be as set forth in ASCE 7 Chapter 16, Section 17.3 or Section 18.2.3. **Exception:** If the floor area of an addition is greater than the larger of 50 per cent of the floor area of the original building or 1,000 square feet (93 m²), then the Table 3417.5 entries for BSE-R and BSE-C are replaced by BSE-1 and BSE-2, respectively.

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SECTION 3418 DEFINITIONS

3418.1. In addition to the definitions given in Section 3402, ~~For~~ for the purposes of this chapter Sections 3417 through 3423, certain terms are defined as follows:

ADDITION...

ALTERATION...

...

BSE-C RESPONSE ACCELERATION PARAMETERS are the parameters (S_{XS} and S_{X1}) ~~as determined either:~~ according to ASCE 41, Section 1.6.1.3 for a mean return period PR equal to 975 years; or by a Site Specific Response Spectrum developed according to ASCE 41, Section 1.6.2 for an Earthquake Hazard Level of 5-percent/50-years probability of exceedance, ~~equivalent to a mean return period of 975 years. taken from 5-percent /50-year maximum direction spectral response acceleration curves or by a Site Specific Response Spectrum developed in accordance with Section 3417.5. Values for BSE-C need not be greater than those for BSE-2.~~

BSE-R RESPONSE ACCELERATION PARAMETERS are the parameters (S_{XS} and S_{X1}) ~~as determined either:~~ according to ASCE 41, Section 1.6.1.3 for a mean return period PR equal to 225 years; or by a Site Specific Response Spectrum developed according to ASCE 41, Section 1.6.2 for an Earthquake Hazard Level of 20-percent /50-years probability of exceedance, ~~equivalent to a mean return period of 225 years. taken from 20-percent /50-year~~

maximum direction spectral response acceleration curves or by a Site Specific Response Spectrum developed in accordance with Section 3417.5. Values for BSE-R need not be greater than those for BSE-1.

Notation

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

CHAPTER 35
REFERENCED STANDARDS
CBSC proposes to adopt 2012 IBC chapter 35 without amendments.

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Notation:

Authority: Health and Safety Code §18928 & 18934.5

References: Health and Safety Code §§18928, 18928.1, & 18934.5

**PART II: EXISTING AMENDMENTS CARRIED FORWARD AND NON-SUBSTANTIVE
EDITORIAL AND FORMATTING AMENDMENTS**

Adopt Chapter 1, Sections 1.1 through 1.2 with existing amendments as shown in Division I

1.1.0 General

1.1.1 Title. *These regulations shall be known as the California Building Code, may be cited as such and will be referred to herein as “this code.” The California Building Code is Part 2 of twelve parts of the official compilation and publication of the adoptions, amendment, and repeal of building regulations to the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. This part incorporates by adoption the ~~2009~~ 2012 International Building Code of the International Code Council with necessary California amendments.*

1.1.2 Purpose. *The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, access to persons with disabilities, sanitation, adequate lighting and ventilation, and energy conservation; safety to life and property from fire and other hazards attributed to the built environment; and to provide safety to fire fighters and emergency responders during emergency operations.*

1.1.3 Scope. *The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout the State of California.*

1.1.3.1 Nonstate-regulated buildings, structures, and applications. *Except as modified by local ordinance pursuant to Section 1.1.8, the following standards in the California Code of Regulations, Title 24, Parts 2, 2.5, 3, 4, 5, 6, 9, 10 and 11 shall apply to all occupancies and applications not regulated by a state agency.*

1.1.3.2 State-regulated buildings, structures, and applications. *The model code, state amendments to the model code, and/or state amendments where there are no relevant model code provisions 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 1.2 through 1.14, except where modified by local ordinance pursuant to Section 1.1.8. 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.*

Note: See Preface to distinguish the model code provisions from the California provisions.

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 1.2 for additional scope provisions.*
2. *Local detention facilities regulated by the Corrections Standards Authority. See Section 1.3 for additional scope provisions.*
3. *Barbering, cosmetology or electrolysis establishments, acupuncture offices, pharmacies, veterinary facilities, and structural pest control locations regulated by the Department of Consumer Affairs. See Section 1.4 for additional scope provisions.*
4. *Reserved for the California Energy Commission. See Section 1.5 for additional scope provisions.*
5. *Dairies and places of meat inspection regulated by the Department of Food and Agriculture. See Section 1.6 for additional scope provisions.*
6. *Organized camps, laboratory animal quarters, public swimming pools, radiation protection, commissaries serving mobile food preparation vehicles, and wild animal quarantine facilities regulated by the Department of Public Health. See Section 1.7 for additional scope provisions.*
7. *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 or without common toilets or cooking facilities. See Section 1.8.2.1.1 for additional scope provisions.*
8. *Accommodations for persons with disabilities in buildings containing newly constructed covered multifamily dwellings, new common use spaces serving existing covered multifamily dwellings, additions to existing buildings where the addition alone meets the definition of "COVERED MULTIFAMILY DWELLINGS," and common-use spaces serving covered multifamily dwellings which are regulated by the Department of Housing and Community Development. See Section 1.8.2.1.2 for additional scope provisions.*
9. *Permanent buildings and permanent accessory buildings or structures constructed within mobilehome parks and special occupancy parks regulated by the Department of Housing and Community Development. See Section 1.8.2.1.3 for additional scope provisions.*
10. *Accommodations for persons with disabilities regulated by the Division of the State Architect. See Section 1.9.1 for additional scope provisions.*
11. *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 1.9.2 for additional scope provisions.*
12. *Reserved for the State Historical Building Safety Board with the Division of the State Architect. See Section 1.9.3 for additional scope provisions.*
13. *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 1.10 for additional scope provisions.*
14. *Applications regulated by the Office of State Fire Marshal include but are not limited to the following in accordance with Section 1.11:*
 1. *Buildings or structures used or intended for use as an:*
 - 1.1. *Asylum, jail, prison.*
 - 1.2. *Mental hospital, hospital, home for the elderly, children's nursery, children's home or institution, school or any similar occupancy of any capacity.*

- 1.3. Theater, dancehall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building, or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.
- 1.4. Small family day care homes, large family day-care homes, residential facilities and residential facilities for the elderly, residential care facilities.
- 1.5. State institutions or other state-owned or state-occupied buildings.
- 1.6. High rise structures.
- 1.7. Motion picture production studios.
- 1.8. Organized camps.
- 1.9. Residential structures.
2. Tents, awnings or other fabric enclosures used in connection with any occupancy.
3. Fire alarm devices, equipment and systems in connection with any occupancy.
4. Hazardous materials, flammable and combustible liquids.
5. Public school automatic fire detection, alarm, and sprinkler systems.
6. Wildland-urban interface fire areas.
15. Public libraries constructed and renovated using funds from the California Library Construction and Renovation Bond Act of 1988 and regulated by the State Librarian. See Section 1.12 for additional scope provisions.
16. Graywater systems regulated by the Department of Water Resources. See Section 1.13 for additional scope provisions.
17. For applications listed in Section 1.9.1 regulated by the Division of the State Architect – Access Compliance, outdoor environments and uses shall be classified according to accessibility uses described in Chapter 11A, 11B and 11C.
18. Marine Oil Terminals regulated by the California State Lands Commission. See Section 1.14 for additional scope provisions.

1.1.4 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 18901 et. seq. 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 1.1.8 of this code.

1.1.5 Referenced codes. The codes, standards and publications adopted and set forth in this code, including other codes, standards and publications referred to therein are, by title and date of publication, hereby adopted as standard reference documents of this code. When this code does not specifically cover any subject related to building design and construction, recognized architectural or engineering practices shall be employed. The National Fire Codes, standards, and the Fire Protection Handbook of the National Fire Protection Association are permitted to be used as authoritative guides in determining recognized fire prevention engineering practices.

1.1.6 NonBuilding standards, orders and regulations. Requirements contained in the International Building Code, or in any other referenced standard, code or document, which are not building standards as defined in Health and Safety Code Section 18909, shall not be construed as part of the provisions of this code. For nonbuilding standards, orders, and regulations, see other titles of the California Code of Regulations.

1.1.7 Order of precedence and use.

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

1.1.7.2 Specific provisions. Where a specific provision varies from a general provision, the specific provision shall apply.

1.1.7.3 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 requirements shall prevail.

1.1.8 City, county, or city and county amendments, additions or deletions.

The provisions of this code do not limit the authority of city, county, or city and county governments to establish more restrictive and reasonably necessary differences to the provisions contained in this code pursuant to complying with Section 1.1.8.1. The effective date of amendments, additions, or deletions to this code of cities, counties, or city and counties filed pursuant to Section 1.1.8.1 shall be the date filed. 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 for Building Standards Law, Health and Safety Code Section 17958 for State Housing Law or Health and Safety Code Section 13869.7 for Fire Protection Districts.

1.1.8.1 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.

Exception: Hazardous building ordinances and programs mitigating unreinforced masonry buildings.

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, Division of Codes and Standards, P.O. Box 1407, Sacramento, CA 95812-1407 or 1800 3rd Street, Room 260, Sacramento, CA 95811.

1.1.9 Effective date of this code. Only those standards approved by the California Building Standards Commission that are effective at the time an application for 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 History Note page of this code.

1.1.10 Availability of codes. At least one complete copy each of Titles 8, 19, 20, 24, and 25 with all revisions shall be maintained in the office of the building official responsible for the administration and enforcement of this code. Each state department concerned and each city, county or city and county shall have an up-to-date copy of the code available for public inspection, See Health and Safety Code Section 18942 (d)(1) and (2).

1.1.11 Format. This part fundamentally adopts the International Building Code by reference on a chapter-by-chapter basis. Such adoption is reflected in the Matrix Adoption Table of each chapter of this part. When the Matrix Adoption Tables make no reference to a specific chapter of the International Building Code such chapter of the International Building Code is not adopted as a portion of this code.

1.1.12 Validity. If any chapter, section, subsection, sentence, clause or phrase of this code is for any reason held to be unconstitutional, contrary to statute, exceeding the authority of the state as stipulated by statutes or otherwise inoperative, such decision shall not affect the validity of the remaining portion of this code.

**SECTION 1.2
BUILDING STANDARDS COMMISSION**

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

1. State buildings for all occupancies.

Application – State buildings (all occupancies), including buildings constructed by the Trustees of the California State University and the Regents of the University of California where no state agency has the authority to adopt building standards applicable to such buildings.

Enforcing agency – State of local agency specified by the applicable provisions of law.

Authority cited – Health and Safety Code Section 18934.6.

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

2. University of California, California State Universities and California Community Colleges.

Application – Standards for lighting for parking lots and primary campus walkways at the University of California, California State Universities and California Community Colleges.

Enforcing agency – State of local agency specified by the applicable provisions of law.

Authority cited – Government Code Section 14617.

Reference – Government Code Section 14617.

3. Existing state-owned buildings, including those owned by the University of California and by the California State University.

Application – Building seismic retrofit standards including abating falling hazards of structural and nonstructural components and strengthening of building structures. See also Division of the State Architect.

Enforcing agency – State of local agency specified by the applicable provisions of law.

Authority cited – Health and Safety Code Section 16600.

Reference – Health and Safety Code Section 16600 through 16604.

4. Unreinforced masonry-bearing wall buildings.

Application – Minimum seismic strengthening standards for building specified in Appendix Chapter A1 of the California Existing Building Code, except for buildings subject to building standards adopted pursuant to Health and Safety Code (commencing) with Section 17910.

Enforcing agency - State of local agency specified by the applicable provisions of law.

Authority cited - Health and Safety Code Section 18934.6.

1.2.1.1 State building. For purposes of this code, a "state building" is a building for which a state agency has authority to construct, alter, enlarge, replace, repair, equip, use or demolish.

1.2.1.2 Enforcement. [For CSU, UC, Judicial Courts, and CDCR] State entities authorized to control state buildings shall appoint a Building Official who is responsible to the agency for enforcement of the provisions of the California Building Standards Code to all its actions. The objectives, duties, functions and responsibilities of the Building Official are described in Division 2 of this chapter.

Exceptions:

1. A state entity shall not be required to appoint a Building Official if, by interagency agreement or other legal means, another state entity, having a Building Official, is assigned the responsibility and authority of Building Official for all other entity's buildings and structures.

2. State buildings regulated by other sections of this code remain the enforcement responsibility of the designated entities.

Reference – Health and Safety Code Sections 18901 through 18949.

1.2.2 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is

satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

1.2.2.1 Research reports. Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.

1.2.2.2 Tests. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the building official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedures. Tests shall be performed by an approved agency. Reports of such tests shall be retained by the building official for the period required for retention of public records.

1.2.3 Adopting agency identification. The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym BSC.

...

SECTION 1205 ADDITIONS

1205.6 Campus Lighting for Parking Facilities and Primary Walkways at California State Universities, Colleges and Community Colleges. Artificial light shall be provided for parking facilities and primary walkways at California State Universities, colleges, and community colleges in accordance with provisions of this subsection. This subsection shall not apply to the University of California unless the Regents of the University of California, by resolution, make it applicable.

1205.6.1 Lighting Requirements. Based on the recommendations of the most current edition of the Illumination Engineering Society lighting handbook, for the following lighting standards shall be used for all new construction of open parking facilities, covered parking facilities and primary walkways:

1. Open and covered parking facilities.
 - 1.1 Medium-level activity usage when medium usage is present.
 - 1.2 High-level activity usage when high usage is present.
2. Primary campus walkways.
 - 2.1 Medium-level activity usage when medium usage is present.
 - 2.2 High-level activity usage when high usage is present

Notation

Authority: Government Code §14617

Reference: Government Code §14617

....

1603.1.9 Systems and components requiring special inspections for seismic resistance. Construction documents or specifications shall be prepared for those systems and components requiring special inspection for seismic resistance as specified in Section 1705.11 by the registered design professional responsible for their design and shall be submitted for approval in accordance with *Section 107.1, Chapter 1, Division II*. Reference to seismic standards in lieu of detailed drawings is acceptable.

....

1612.5 Flood hazard documentation. The following documentation shall be prepared ...

1. For construction in flood hazard areas ...
 - 1.1. The elevation of the lowest floor, including the basement, as required by the lowest floor elevation inspection in *Section 110.3.3, Chapter 1, Division II*
...
2. For construction in flood hazard areas subject to high-velocity wave action:

2.1. The elevation of the bottom of the lowest horizontal structural member as required by the lowest floor elevation inspection in Section 110.3.3, *Chapter 1, Division II*

....

1613.1 Scope. Every structure, and portion thereof,...

...

1613.1.2. State-owned buildings. *State-owned buildings, including those of the University of California, CSU and Judicial Council, shall not be constructed where any portion of the foundation would be within a mapped area of earthquake-induced liquefaction of landsliding or within 50 feet of a mapped fault rupture hazard as established by Section 18023.7*

....

1613.3 Existing buildings. Additions, alterations, repairs, or change of occupancy

.....
1613.3.1 Existing state buildings. *Additions, alterations, repairs, or change of occupancy category of existing buildings shall be in accordance with Chapter 34.*

.....
1704.2.3 Statement of special inspections. The applicant shall submit a statement of special inspections in accordance with Section 107.1 *Chapter 1, Division II*, as a condition for permit issuance. This statement shall be in accordance with Section 1704.3.

...

(Reference 2010 CBC, 1712.1)

1707.1 General. In the absence of approved rules or other approved standards, the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 104.11 *Chapter 1, Division II.* The cost of all tests and other investigations required under the provisions of this code shall be borne by the applicant.

[BSC] *In the absence of approved rules or other approved standards, the building official shall make, or cause to be made, the necessary tests and investigations; or the building official shall accept duly authenticated reports from approved agencies in respect to the quality and manner of use of new materials or assemblies as provided for in Section 1.2.2, Chapter 1, Division I. The cost of all tests and other investigations required under the provisions of this code shall be borne by the applicant.*

....

1810.3.10.4 Seismic reinforcement. For structures assigned to Seismic Design Category C...
...as an alternate system in accordance with Section 104.11, *Chapter 1, Division II.* The alternative system design, supporting documentation and test data shall be submitted to the building official for review and approval.

...

...
2503.1 Inspection. Lath and gypsum board shall be inspected in accordance with Section 110.3.5, *Chapter 1, Division II.*

...

3109.4.4 Private swimming pools (statewide). *These regulations are subject to local government...*

3109.4.4.1 Definitions. *As used in this division, the following terms...*

3109.4.4.2 Construction permit; safety features required. *Commencing January 1, 2007, except as provided in Section 3109.4.4.5...*

3109.4.4.3 Enclosure; required characteristics. *An enclosure shall have all of the ...*

3109.4.4.4 Agreements to build; notice of provisions. *Any person entering into an agreement...*

3109.4.4.5 Exempt facilities. *The requirements of this article shall not...*

3109.4.4.6 Application to facilities regulated by the Department of Social Services. *This division does not apply to any...*

3109.4.4.7 Modifications and interpretation of division. *Notwithstanding any other provision of law...*

3109.4.4.8 Construction requirements for building a pool or spa. *Whenever a building permit is issued...*

...

SECTION 3401

GENERAL

3401.1 Scope. The provisions of this chapter shall control the alteration, repair, addition and change of occupancy of existing buildings and structures, *including state-regulated structures in accordance with sections 3401.1.1 and 3401.1.2*

...

3401.1.1 Existing state-owned structures. *The provisions of Sections 3417 through 3422 establish minimum standards for earthquake evaluation and design for retrofit of existing state-owned structures, including buildings owned by the University of California and the California State University.*

...

3401.7 Dangerous conditions. [BSC] *Regardless of the extent of structural or nonstructural damage, the building official shall have the authority to require the elimination of conditions deemed dangerous.*

...

3401.8 Alternate compliance. *Work performed in accordance with the international Existing Building Code shall be deemed to comply the provisions of this code.*

...

SECTION 3403 ADDITIONS

3403.1 General. Additions to any building or structure shall comply ...

Exception: *For state-owned buildings, including those owned by the University of California and the California State University and the judicial council, the requirements of Sections 3403.3 and 3403.4 are replaced by the requirements of Sections 3417 through 3422.*

SECTION 3404 ALTERATIONS

3404.1 General. Except as provided by Section 3401.4 ...

Exceptions:

1. An existing...
2. Handrails ...
3. *For state-owned buildings, including those owned by the University of California and the California State University and the judicial council, the requirements of Sections 3404.3 through 3404.5 are replaced by the requirements of Sections 3417 through 3422.*

SECTION 3405 REPAIRS

3405.1 General. Buildings and structures, and parts thereof, shall be repaired in compliance with Section...

Exception: *For state-owned buildings, including those owned by the University of California and the California State University and the judicial council, the requirements of Sections 3403.3 and 3403.4 are replaced by the requirements of Sections 3417 through 3422.*

...

3417.1 Purpose.

3417.1.1 Existing state-owned structures. *The provisions of Sections 3417 through 3423 establish minimum standards for earthquake evaluation and design for retrofit of existing state-owned structures, including buildings owned by the University of California and the California State University.*

The provisions of Sections 3417 through 3423 may be adopted by a local jurisdiction for earthquake evaluation and design for retrofit of existing buildings.

...

3417.2 Scope. *All modifications, structurally connected additions and/or repairs to existing structures or portions thereof shall, at a minimum, be designed and constructed to resist the effects of seismic ground motions as provided in this section. The structural system shall be evaluated by a registered design professional and, if not meeting or*

exceeding the minimum seismic design performance requirements of this section, shall be retrofitted in compliance with these requirements.

Exception: Those structures for which Section 3417.3 determines that assessment is not required, or for which Section 3417.4 determines that retrofit is not needed, then only the requirements of Section 3417.11 apply.

...

3417.3 Applicability.

3417.3.1 Existing state-owned buildings. For existing state-owned structures including all buildings owned by the University of California and the California State University, the requirements of Section 3417 apply whenever the structure is to be retrofitted, repaired or modified and any of the following apply:

1. Total construction cost, not including cost of furnishings, fixtures and equipment, or normal maintenance, for the building exceeds 25 percent of the construction cost for the replacement of the existing building. The changes are cumulative for past modifications to the building that occurred after adoption of the 1995 California Building Code and did not require seismic retrofit.
2. There are changes in ~~occupancy~~ occupancy risk category.
3. The modification to the structural components increases the seismic forces in or strength requirements of any structural component of the existing structure by more than 10 percent cumulative since the original construction, unless the component has the capacity to resist the increased forces determined in accordance with Section 3419. If the building's seismic base shear capacity has been increased since the original construction, the percent change in base shear may be calculated relative to the increased value.
4. Structural elements need repair where the damage has reduced the lateral-load-resisting capacity of the structural system by more than 10 percent.
5. Changes in live or dead load increase story shear by more than 10 percent.

....

3417.4 Evaluation required. If the criteria in Section 3417.3 apply to the project under consideration, the design professional of record shall provide an evaluation in accordance with Section 3417 to determine the seismic performance of the building in its current configuration and condition. If the structure's seismic performance as required by Section 3417.5 is evaluated as satisfactory and the peer reviewer(s), when Method B of Section 3421 is used, concur, then no structural retrofit is required.

...

3417.6 Retrofit required. Where the evaluation indicates the building does not meet the required performance objectives of this section, the owner shall take appropriate steps to ensure that the building's structural system is retrofitted in accordance with the provisions of Section ~~3415~~ 3417. Appropriate steps are either: 1) undertake the seismic retrofit as part of the additions, modifications and/or repairs of the structure; or 2) provide a plan, acceptable to the building official, to complete the seismic retrofit in a timely manner. The relocation or moving of an existing building is considered to be an alteration requiring filing of the plans and specifications approved by the building official.

3417.7 The additions, modification or repair to any existing building are permitted to be prepared in accordance with the requirements for a new building, Chapter 16, Part 2, Title 24, C.C.R., 2007 edition, applied to the entire building.

3417.8 The requirements of ASCE 41 Chapter 9 are to apply to the use of seismic isolation or passive energy systems for the repair, modification or retrofit of an existing structure. When seismic isolation or passive energy dissipation is used, the project must have project peer review as prescribed in Section ~~3420~~ 3422.

3417.9 Any construction required by this chapter shall include structural observation by the registered design professional who is responsible for the structural design in accordance with Section ~~3417.10~~ 3419.10.

3417.10 Where Method B of Section ~~3419~~ 3421 is used or is required by Section ~~3415.8~~ 3419.7, the proposed method of building evaluation and design procedures must be accepted by the building official prior to the commencement of the work.

3417.11 Voluntary lateral-force-resisting system modifications. Where the exception of Section ~~3415.2~~ 3417.2 applies, modifications of existing structural components and additions of new structural components that are initiated

for the purpose of improving the seismic performance of an existing structure and that are not required by other portions of this chapter are permitted under the requirements of Section ~~3417.42~~ 3419.12.

**SECTION 3418
DEFINITIONS**

3418.1. In addition to the definitions given in Section 3402, For the purposes of this chapter Sections 3417 through 3423, certain terms are defined as follows:

...
ADDITION means any work that increases the floor or roof area or the volume of enclosed space of an existing building, and is structurally attached to the existing building by connections that are required for transmitting vertical or horizontal loads between the addition and the existing structure.

ALTERATION means any change within or to an existing building, which does not increase and may decrease the floor or roof area or the volume of enclosed space.

....
BUILDING OFFICIAL is that individual within the agency or organization charged with responsibility for compliance with the requirements of this code. For some agencies this person is termed the "enforcement agent."

DESIGN is the procedure that includes both the evaluation and retrofit design of an existing component, element or structural system, and design of a new component, element or structural system.

ENFORCEMENT AGENCY (Authority Having Jurisdiction in ASCE 41) is the agency or organization charged with responsibility for agency or organization compliance with the requirements of this code.

METHOD A refers to the procedures prescribed in Section ~~3418~~ 3420.

METHOD B refers to the procedures allowed in Section ~~3419~~ 3421.

MODIFICATIONS. For this chapter, modification is taken to include repairs to structures that have been damaged.

N-A, N-B, N-C, N-D, N-E are seismic nonstructural component performance measures as defined in ASCE 41. N-A corresponds to the highest performance level, and N-D the lowest, while N-E is not considered.

PEER REVIEW refers to the procedures contained in Section ~~3420~~ 3422.

REPAIR as used in this chapter means the design and construction work undertaken to restore or enhance the structural and nonstructural load-resisting system participating in the lateral response and stability of a structure that has experienced damage from earthquakes or other destructive events.

S-1, S-2, S-3, S-4, S-5, S-6 are seismic structural performance measures as defined in ASCE 41. S-1 corresponds to the highest performance level, and S-5 the lowest, while S-6 is not considered.

SPECIFIC PROCEDURES are the procedures listed in Section ~~3417.4.4~~ 3419.1.1.

STRUCTURAL REPAIRS are any changes affecting existing or requiring new structural components primarily intended to correct the effects of damage, deterioration or impending or actual failure, regardless of cause.

....

TABLE 3417.5 SEISMIC PERFORMANCE REQUIREMENTS BY BUILDING REGULATORY AUTHORITY AND OCCUPANCY RISK CATEGORY. ALL BUILDINGS NOT REGULATED BY DSA ARE ASSIGNED AS "STATE-OWNED."

Building Regulatory Authority	Occupancy Risk Category	PERFORMANCE CRITERIA	
		Level 1	Level 2
State-Owned	I, II, III	BSE-R, S-3, N-D	BSE-C, S-5, N-E
State-Owned	IV	BSE-R, S-2, N-B	BSE-C, S-4, N-C
Division of the State Architect - Public schools	I	BSE-1, S-3, N-C	BSE-2, S-5, N-E
Division of the State Architect - Public schools	II, III	BSE-1, S-2, N-C	BSE-2, S-4, N-D
Division of the State Architect - Public schools	IV	BSE-1, S-2, N-C	BSE-2, S-4, N-C
Division of the State Architect - Community college	I, II, III	BSE-R, S-3, N-D	BSE-2, S-5, N-E

1. ASCE 41 provides acceptance criteria (e.g. m , rotation) for Immediate Occupancy (S1), Life Safety (S3), and Collapse Prevention (S5), and specifies that values for S-2 and S-4 are to be determined by interpolation between the adjacent performance level values.

The required method of interpolation is as follows:

For level S-2, the acceptance value is $\frac{1}{3}$ of the sum of the tabulated value for Immediate Occupancy (IO level) and twice the tabulated value for the Life Safety (LS level).

For level S-4, the acceptance value is one-half the sum of the value for the LS level and the value for the Collapse Prevention (CP) level.

For nonstructural components, N-A corresponds to the IO level, N-C to the LS level, and N-D to the Hazards Reduced (HR level).

For evaluation procedures, N-B shall be the same as for N-A. Where numerical values are used, the values for N-B are one half the sum of the appropriate IO and LS values. Where IO or CP values are not given by ASCE 41, then the LS values are permitted to be substituted.

2. Buildings evaluated and retrofitted to meet the requirements for a new building, Chapter 16, Part 2, Title 24, in accordance with the exception in Section 3419.1, are deemed to meet the seismic performance requirements of this section.

....

SECTION 3419 SEISMIC CRITERIA SELECTION FOR EXISTING BUILDINGS

3419.1 Basis for evaluation and design. This section determines what technical approach is to be used for the seismic evaluation and design for existing buildings. For those buildings or portions of buildings for which Section 3417 requires action, the procedures and limitations for the evaluation of existing buildings and design of retrofit systems and/or repair thereof shall be implemented in accordance with this section.

One of the following approaches must be used:

1. Method A of Section 3420;
2. Method B of Section 3421, with independent review of a peer reviewer as required in Section ~~3420~~ 3422; or
3. For state-owned buildings only, the use of one of the specific procedures listed in Section 3419.1.1.

When Method B is chosen it must be approved by the building official, and, where applicable, by the peer reviewer. All referenced standards in ASCE 41 shall be replaced by referenced standards listed in Chapter 35 of this code.

...

3419.1.1 Specific procedures. For state-owned buildings, the following specific procedures taken from the International Existing Building Code (IEBC) Appendix A may be used, without peer review, for their respective types of construction to comply with the seismic performance requirements for ~~Occupancy~~ Risk Category I, II or III buildings:

1. Seismic Strengthening Provisions for Unreinforced Masonry Bearing Wall Buildings (Chapter A1 of the IEBC).
2. Prescriptive Provisions for Seismic Strengthening of Cripple Walls and Sill Plate Anchorage of Light Wood-Frame, Residential Buildings (Chapter A3 of the IEBC).
3. Earthquake Hazard Reduction in Existing Reinforced Concrete and Reinforced Masonry Wall Buildings with Flexible Diaphragms (Chapter A2 of the IEBC).

3419.1.2 When a design project is begun under Method B the selection of the peer reviewer is subject to the approval of the building official. Following approval by the peer reviewer, the seismic criteria for the project and the planned evaluation provisions must be approved by the building official. The approved seismic criteria and evaluation provisions shall apply. Upon approval of the building official these are permitted to be modified.

3419.1.3 For state-owned and community college buildings, where unreinforced masonry is not bearing, it may be used only to resist applied lateral loads. Where unreinforced masonry walls are part of the structure they must be assessed for stability under the applicable nonstructural evaluation procedure.

...

3419.2 Existing conditions. The existing condition and properties of the entire structure must be determined and documented by thorough inspection of the structure and site, review of all available related construction documents, review of geotechnical and engineering geologic reports, and performance of necessary testing and investigation. Where samples from the existing structure are taken or in situ tests are performed, they shall be selected and interpreted in a statistically appropriate manner to ensure that the properties determined and used in the evaluation or design are representative of the conditions and structural circumstances likely to be encountered in the structure as a whole. Adjacent structures or site features that may affect the retrofit design shall be identified.

The entire load path of the seismic-force-resisting system shall be determined, documented and evaluated. The load path includes all the horizontal and vertical elements participating in the structural response: such as diaphragms, diaphragm chords, diaphragm collectors, vertical elements such as walls frames, braces; foundations and the connections between the components and elements of the load path. Repaired or retrofitted elements and the standards under which the work was constructed shall be identified.

Data collection in accordance with ASCE 41 Section 2.2 shall meet the following minimum levels:

1. For state-owned buildings, the requirements shall be met following the data collection requirements of ASCE 41 Section 2.2.

....

Qualified test data from the original construction may be accepted, in part or in whole, by the enforcement agency to fulfill the data collection requirements.

Exceptions:

1. The number of samples for data collection may be adjusted with approval of the enforcement agency when it has been determined that adequate information has been obtained or additional information is required.
2. Welded steel moment frame connections of buildings that may have experienced potentially damaging ground motions shall be inspected in accordance with Chapters 3 and 4, FEMA 352, Recommended Post Earthquake Evaluation and Repair Criteria for Welded Moment-Frame Construction for Seismic Applications (July 2000).

Where original building plans and specifications are not available, "as-built" plans shall be prepared that depict the existing vertical and lateral structural systems, exterior elements, foundations and nonstructural systems in sufficient detail to complete the design.

Data collection shall be directed and observed by the project structural engineer or design professional in charge of the design.

3419.3 Site geology and soil characteristics. Soil profile shall be assigned in accordance with the requirements of Chapter 18.

3419.4 Occupancy Risk categories. For purposes of earthquake-resistant design, each structure shall be placed in one of the occupancy risk categories in accordance with the requirements of this code.

3419.5 Configuration requirements. Each structure shall be designated structurally regular or irregular in accordance with the requirements of ASCE 41, Sections 2.4.1.1.1. to 2.4.1.1.4.

3419.6 General selection of the design method. The requirements of Method B (Section ~~3419~~ 3421) may be used for any existing building.

3419.7 Prescriptive selection of the design method. The requirements of Method A (Section ~~3418~~ 3420) or the specific procedures for applicable building types given in Section ~~3417-1.1~~ 3419.1.1 are permitted to be used except under the following conditions, where the requirements of Method B (Section ~~3419~~ 3421) must be used.

3419.7.1 When the building contains prestressed or post-tensioned structural components (beams, columns, walls or slabs) or contains precast structural components (beams, columns, walls or flooring systems).

3419.7.2 When the building is classified as irregular in vertical or horizontal plan by application of ASCE/SEI 7-05 Section 12.3 and/or ASCE 41, Sections 2.4.1.1.1 to 2.4.1.1.4, unless the irregularity is demonstrated not to affect the seismic performance of the building.

Exception: If the retrofit design removes the configurational attributes that caused the building to be classified as irregular, then Section 3419.7.2 does not apply and Method A may be used.

3419.7.3 For any building that is assigned to ~~Occupancy~~ Risk Category IV.

3419.7.4 For any building using undefined or hybrid structural systems.

3419.7.5 When seismic isolation or energy dissipation systems are used in the retrofit or repair, either as part of the existing structure or as part of the modifications.

3419.7.6 When the height of the structure exceeds 240 feet (73 152 mm).

3419.8 Strength requirements. All components of the lateral-force-resisting system must have the strength to meet the acceptance criteria prescribed in ASCE 41, Chapter 3, or as prescribed in the applicable Appendix A chapter of the IEBC if a specific procedure in Section 3419.1.1 is used. Any component not having this strength shall have its capacity increased by modifying or supplementing its strength so that it exceeds the demand, or the demand is reduced to less than the existing strength by making other modifications to the structural system.

Exception: A component's strength is permitted to be less than that required by the specified seismic load combinations if it can be demonstrated that the associated reduction in seismic performance of the component or its removal due to the failure does not result in a structural system that does not comply with the required performance objectives of Section 3417. If this exception is taken for a component, then it cannot be considered part of the primary lateral-load-resisting system.

3419.9 Nonstructural component requirements. Where the nonstructural performance levels required by Section 3417, Table 3417.5 are N-D or higher, mechanical, electrical and plumbing components shall comply with the provisions of ASCE 41, Chapter 11, Section 11.2.

Exception: Modifications to the procedures and criteria may be made subject to approval by the building official, and concurrence of the peer reviewer if applicable. All reports and correspondence shall also be forwarded to the building official.

3419.10 Structural observation, testing and inspection. Structural, geotechnical and construction observation, testing and inspection as used in this section shall mean meeting the requirements of Chapter 17, with a minimum allowable level of investigation corresponding to seismic design category (SDC) D. At a minimum the project site will be visited by the responsible design professional to observe existing conditions and to review the construction work for general compliance with approved plans, specifications and applicable structural regulations. Such visits shall occur at significant construction stages and at the completion of the structural retrofit. Structural observation shall be provided for all structures. The plan for testing and inspection shall be submitted to the building official for review and approval with the application for permit.

Additional requirements: For public schools and community colleges, construction material testing, inspection and observation during construction shall also comply with Section 4-333, Part 1, Title 24.

3419.10.1 The registered design professional, or their designee, responsible for the structural design shall be retained to perform structural observation and independently report to the owner of observations and findings as they relate to adherence to the permitted plans and good workmanship.

3419.10.2 At the conclusion of construction, the structural observer shall submit to the enforcement agency and the owner a final written statement that the required site visits have been made, that the work, to the best of the structural observers knowledge and belief, is or is not in general conformity to the approved plans and that the observed structural deficiencies have been resolved and/or listing those that, to the best of the structural observers knowledge and belief, have not been satisfactorily corrected.

3419.10.2.1 The requirement for structural observation shall be noted and prominently displayed on the front sheet of the approved plans and incorporated into the general notes on the approved plans.

3419.10.2.2 Preconstruction meeting. A preconstruction meeting is mandatory for all projects which require structural observation. The meeting shall include, but is not limited to, the registered design professional, structural observer, general constructor, affected subcontractors, the project inspector and a representative of the enforcement agency (designated alternates may attend if approved by the structural observer). The structural observer shall schedule and coordinate this meeting. The purpose of the meeting is

to identify and clarify all essential structural components and connections that affect the lateral and vertical load systems and to review scheduling of the required observations for the project's structural system retrofit.

3419.11 Temporary actions. When compatible with the building use, and the time phasing for both use and the retrofit program, temporary shoring or other structural support is permitted to be considered. Temporary bracing, shoring and prevention of falling hazards are permitted to be used to qualify for Exception 1 in Section ~~3417.9~~ 3419.12 that allows inadequate capability in some existing components, as long as the required performance levels given in Section ~~3445~~ 3417 can be provided by the permanent structure. The consideration for such temporary actions shall be noted in the design documents.

3419.12 Voluntary modifications to the lateral-force resisting system. Where modifications of existing structural components and additions of new structural components are initiated for the purpose of improving the lateral-force resisting strength or stiffness of an existing structure and they are not required by other sections of this code, then they are permitted to be designed to meet an approved seismic performance criteria provided that an engineering analysis is submitted that follows:

1. The capacity of existing structural components required to resist forces is not reduced, unless it can be demonstrated that reduced capacity meets the requirements of Section 3419.8.
2. The lateral loading to or strength requirement of existing structural components is not increased beyond their capacity.
3. New structural components are detailed and connected to the existing structural components as required by this code for new construction.
4. New or relocated nonstructural components are detailed and connected to existing or new structural components as required by this code for new construction.
5. A dangerous condition is not created.

3419.12.1 State-owned buildings. Voluntary modifications to lateral-force-resisting systems conducted in accordance with Appendix A of the IEBC and the referenced standards of this code shall be permitted.

3419.12.1.1 Design documents. When Section 3419.12 is the basis for structural modifications, the approved design documents must clearly state the scope of the seismic modifications and the accepted criteria for the design. The approved design documents must clearly have the phrase "The seismic requirements of Chapter 34 for existing buildings have not been checked to determine if these structural modifications meet CBC requirements: the modifications proposed are to a different seismic performance standard than would be required in Section 3419 if they were not voluntary as allowed in Section 3419.12."

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SECTION 3420 METHOD A

3420.1 General. The retrofit design shall employ the Linear Static or Linear Dynamic Procedures of ASCE 41, Section 3.3.1 or 3.3.2, and comply with the applicable general requirements of ASCE 41, Chapters 2 and 3. The earthquake hazard level and performance level given specified in Section 3417.5 for the building's ~~occupancy type~~ risk category shall be used. Structures shall be designed for seismic forces coming from any horizontal direction.

Exception: The ASCE 41 Simplified Rehabilitation Method of Chapter 10 may be used if the Level 1 seismic performance level is S-3 or lower, the building's structural system is one of the primary building types described in ASCE 41, Table 10-2, and ASCE 41, Table 10-1 permits its use for the building height.

SECTION 3421 METHOD B

3421.1 The existing or retrofitted structure shall be demonstrated to have the capability to sustain the deformation response due to the specified earthquake ground motions and meet the seismic performance requirements of Section 3417. The registered design professional shall provide an evaluation of the response of the existing structure in its modified configuration and condition to the ground motions specified. If the building's seismic performance is evaluated as satisfactory and the peer reviewer(s) and the enforcement agency concurs, then no further structural modifications of the lateral-load-resisting system are required.

When the evaluation indicates the building does not meet the required performance levels given in Table 3417.5 for

the occupancy type risk category, then a retrofit and/or repair design shall be prepared that provides a structure that meets these performance objectives and reflects the appropriate consideration of existing conditions. Any approach to analysis and design is permitted to be used, provided that the approach shall be rational, shall be consistent with the established principals of mechanics and shall use the known performance characteristics of materials and assemblages under reversing loads typical of severe earthquake ground motions.

Exception: Further consideration of the structure's seismic performance may be waived by the enforcement agency if both the registered design professional and peer reviewer(s) conclude that the structural system can be expected to perform at least as well as required by the provisions of this section without completing an analysis of the structure's compliance with these requirements. A detailed report shall be submitted to the responsible building official that presents the reasons and basis for this conclusion. This report shall be prepared by the registered design professional. The peer reviewer(s) shall concur in this conclusion and affirm to it in writing. The building official shall either approve this decision or require completion of the indicated work specified in this section prior to approval.

3421.2 The approach, models, analysis procedures, assumptions on material and system behavior and conclusions shall be peer reviewed in accordance with the requirements of Section ~~3420~~ 3422 and accepted by the peer reviewer(s).

Exceptions:

1. The enforcement agency may perform the work of peer review when qualified staff is available within the jurisdiction.
2. The enforcement agency may modify or waive the requirements for peer review when appropriate.

3421.2.1 The approach used in the development of the design shall be acceptable to the peer reviewer and the enforcement agency and shall be the same method as used in the evaluation of the building. Approaches that are specifically tailored to the type of building, construction materials and specific building characteristics may be used, if they are acceptable to the independent peer reviewer. The use of Method A allowed procedures may also be used under Method B.

3421.2.2 Any method of analysis may be used, subject to acceptance by the peer reviewer(s) and the building official. The general requirements given in ASCE 41, Chapter 2, shall be complied with unless exceptions are accepted by the peer reviewer(s) and building official. Use of other than ASCE 41 procedures in Method B requires building official concurrence before implementation.

3421.2.3 Prior to implementation, the procedures, methods, material assumptions and acceptance/rejection criteria proposed by the registered design professional will be peer reviewed as provided in Section 3422. Where nonlinear procedures are used, prior to any analysis, the representation of the seismic ground motion shall be reviewed and approved by the peer reviewer(s) and the building official.

3421.2.4 The conclusions and design decisions shall be reviewed and accepted by the peer reviewer(s) and the building official.

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SECTION 3422 PEER REVIEW REQUIREMENTS

3422.1 General. Independent peer review is an objective, technical review by knowledgeable reviewer(s) experienced in the structural design, analysis and performance issues involved. The reviewer(s) shall examine the available information on the condition of the building, the basic engineering concepts employed and the recommendations for action.

3422.3 Qualifications and terms of employment. The reviewer(s) shall be independent from the design and construction team.

3422.3.1 The reviewer(s) shall have no other involvement in the project before, during or after the review, except in a review capacity.

3422.3.2 The reviewer(s) shall be selected and paid by the owner and shall have technical expertise in the evaluation and retrofit of buildings similar to the one being reviewed, as determined by the enforcement agency.

3422.3.3 The reviewer (or in the case of review teams, the chair) shall be a California-licensed structural engineer who is familiar with the technical issues and regulations governing the work to be reviewed.

Exception: Other individuals with acceptable qualifications and experience may be a peer reviewer(s) with the approval of the building official.

3422.3.4 The reviewer shall serve through completion of the project and shall not be terminated except for failure to perform the duties specified herein. Such termination shall be in writing with copies to the enforcement agency, owner and the registered design professional. When a reviewer is terminated or resigns, a qualified replacement shall be appointed within 10 working days, and the reviewer shall submit copies of all reports, notes and correspondence to the responsible building official, the owner and the registered design professional within 10 working days of such termination.

3422.3.5 The peer reviewer shall have access in a timely manner to all documents, materials and information deemed necessary by the peer reviewer to complete the peer review.

3422.4 Scope of review. Review activities shall include, where appropriate, available construction documents, design criteria and representative observations of the condition of the structure, all inspection and testing reports, including methods of sampling, analytical models and analyses prepared by the registered design professional and consultants, and the retrofit or repair design. Review shall include consideration of the proposed design approach, methods, materials, details and constructability. Changes observed during construction that affect the seismic-resisting system shall be reported to the reviewer in writing for review and recommendation.

3422.5 Reports. The reviewer(s) shall prepare a written report to the owner and building official that covers all aspects of the review performed, including conclusions reached by the reviewer(s). Reports shall be issued after the schematic phase, during design development, and at the completion of construction documents but prior to submittal of the project plans to the enforcement agency for plan review. When acceptable to the building official, the requirement for a report during a specific phase of the project development may be waived.

Such reports should include, at the minimum, statements of the following:

1. Scope of engineering design peer review with limitations defined.
2. The status of the project documents at each review stage.
3. Ability of selected materials and framing systems to meet performance criteria with given loads and configuration.
4. Degree of structural system redundancy and the deformation compatibility among structural and nonstructural components.
5. Basic constructability of the retrofit or repair system.
6. Other recommendations that would be appropriate to the specific project.
7. Presentation of the conclusions of the reviewer identifying any areas that need further review, investigation and/or clarification.
8. Recommendations.

The last report prepared prior to submittal of permit documents to the enforcement agency shall include a statement indicating that the design is in conformance with the approved evaluation and design criteria

3422.6 Response and resolutions. The registered design professional shall review the report from the reviewer(s) and shall develop corrective actions and responses as appropriate. Changes observed during construction that affect the seismic-resisting system shall be reported to the reviewer in writing for review and recommendations. All reports, responses and resolutions prepared pursuant to this section shall be submitted to the responsible enforcement agency and the owner along with other plans, specifications and calculations required. If the reviewer resigns or is terminated prior to completion of the project, then the reviewer shall submit copies of all reports, notes and correspondence to the responsible building official, the owner and the registered design professional within 10 working days of such termination.

3422.7 Resolution of conflicts. When the conclusions and recommendations of the peer reviewer conflict with the registered design professional's proposed design, the enforcement agency shall make the final determination of the requirement for the design.