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Via E-mail

December 24, 2018

Ms. Mia Marvelli
Executive Director
California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, California 95833

Re: Comments on HCD 15-day Express Terms

Dear Ms. Marvelli:

I have reviewed the *15-day Express Terms for Proposed Building Standards for the Department of Housing and Community Development regarding the 2019 California Existing Building Code, California Code of Regulations, Title 24, Part 10*. The following are my comments.

I am disappointed that HCD has only proposed to change a few of the items that were discussed at length at the California Building Standards Commission meeting on December 4, 2018. In addition to my verbal testimony at that meeting, HCD was provided my comments in writing, which provided a detailed description of the problems with the proposed changes and the justification for those changes. The grave concerns that I expressed to HCD were not addressed by HCD.

The primary issues with the 15-day Express Terms are 1) that they leave out the "in-kind" repair provisions from *Chapter 4, Repairs*, and 2) that they do not remove the adoption of the structural upgrade triggers in the IEBC. Consequently, engineers, architects, and building officials will be directed to go to *Section 405.2 Repairs to damaged buildings*, which states, "Repairs to damaged buildings shall comply with this section." This section contains all of the structural upgrade triggers required for *non-residential* structures. The effect will be that, in direct conflict with state law, structural upgrades will be required for damaged residential buildings. For example, if an earthquake causes cracks in the gypsum board walls of an apartment building, that apartment building may be required to be seismically upgraded, which work could require strengthening of portions of the building that were not even damaged, including upgrading the foundation, instead of simply repairing the cracked gypsum board, which the "in-kind" provisions currently allows. Requiring structural upgrading of damaged residential structures will have a huge financial impact on California, particularly after natural disasters like earthquakes or wildfires where thousands of residential structures may be damaged. Insufficient funds available for structural upgrading could lead to widespread abandonment of these structures.

Contrast the proposed HCD amendments for the 2019 CEBC with the past three code cycles where the "in-kind" provisions are located directly in the section on replacement materials and repair. For example, in the 2016 CEBC, the "in-kind" repair provisions occur three times in *Chapter 4, Prescriptive Compliance Method* alone -- first in Section 401.2, *Building materials and systems*; second in Section 403.1, *General* (under Section 403 Alterations); and third in Section 404.1, *General* (under Section 404 Repairs). The past

three code cycles made it clear to engineers, architects, and building officials that "in-kind" repairs were allowed for residential structures, which is consistent with state law. In particular, inclusion of "in-kind" language in the section *Building materials and systems* made it indelibly clear that "in-kind" applied to building materials and to seismic systems alike. To the contrary, by proposing to put the "in-kind" language in only one section of the code far removed from Chapter 4, *Repairs*, and without reference to seismic systems, HCD is virtually guaranteeing confusion regarding how to interpret the code and is virtually guaranteeing that seismic systems that experience damage will be caused to be upgraded rather than being repaired in-kind. The repair sections of the 2018 IEBC and 2016 CEBC are attached to this letter so that you can view these differences.

Further, the past three code cycles specifically did not adopt the structural upgrade triggers in the Repair chapter. Adopting the structural upgrade triggers, as HCD now proposes, is in direct conflict with state law, is a major change from past code cycles, will result in confusion between the "in-kind" language in Chapter 3 and the upgrade triggers in Chapter 4, and will result in huge fiscal impacts on California. HCD's Initial Statement of Reasons for adopting these triggers demonstrates HCD's fundamental misunderstanding of state law, which is to allow "in-kind" repair of residential buildings.

Note that the Economic and Fiscal Statement, Form 399, that HCD prepared necessarily and grossly underestimates the economic impact of their proposed regulations because it does not consider the widespread structural upgrading that will be required either in the event of a natural disaster or due to day-to-day damage that regularly occurs to the buildings in cities throughout the State of California.

Therefore, as a minimum, HCD should:

1. Include the "in-kind" repair provisions under Section 401, *General* and in Section 405.2, *Repairs to damaged buildings*.
2. Not adopt the structural upgrade triggers in Section 405.2, *Repairs to damaged buildings* (specifically Sections 405.2.1, 405.2.1.1, 405.2.2, 405.2.3, 405.2.3.1, 405.2.3.2, 405.2.3.3, 405.2.4, and 405.2.4.1) as well as Section 302.5.1, *New structural members and connections*.

Please contact me if you have any questions, or need further information.

Sincerely,

WISS, JANNEY, ELSTNER ASSOCIATES, INC.

Kent K. Sasaki

Kent K. Sasaki, P.E., S.E. #3972
Unit Manager and Principal
California Building Standards Commissioner

2018

INTERNATIONAL CODES®

IEBC®

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INTERNATIONAL **EXISTING BUILDING** CODE®

INTERNATIONAL CODE COUNCIL®

2018 IEBC
No "in-kind" repair provisions.
Structural upgrades proposed to be adopted by HCD shown in red.

CHAPTER 4

REPAIRS

User note:

About this chapter: *Chapter 4 provides requirements for repairs of existing buildings. The provisions define conditions under which repairs may be made using materials and methods like those of the original construction or the extent to which repairs must comply with requirements for new buildings.*

SECTION 401
GENERAL

401.1 Scope. *Repairs* shall comply with the requirements of this chapter. *Repairs* to *historic buildings* need only comply with Chapter 12.

401.2 Compliance. The work shall not make the building less complying than it was before the *repair* was undertaken.

[BS] 401.3 Flood hazard areas. In flood hazard areas, *repairs* that constitute *substantial improvement* shall require that the building comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable.

SECTION 402
BUILDING ELEMENTS AND MATERIALS

402.1 Glazing in hazardous locations. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of the *International Building Code* or *International Residential Code* as applicable.

Exception: Glass block walls, louvered windows and jalousies repaired with like materials.

SECTION 403
FIRE PROTECTION

403.1 General. *Repairs* shall be done in a manner that maintains the level of fire protection provided.

SECTION 404
MEANS OF EGRESS

404.1 General. *Repairs* shall be done in a manner that maintains the level of protection provided for the means of egress.

SECTION 405
STRUCTURAL

[BS] 405.1 General. Structural *repairs* shall be in compliance with this section and Section 401.2.

[BS] 405.2 Repairs to damaged buildings. *Repairs* to damaged buildings shall comply with this section.

[BS] 405.2.1 Repairs for less than substantial structural damage. Unless otherwise required by this section, for damage less than *substantial structural damage*, the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 405.2.1.1 Snow damage. Structural components whose damage was caused by or related to snow load effects shall be repaired, replaced or altered to satisfy the requirements of Section 1608 of the *International Building Code*.

[BS] 405.2.2 Disproportionate earthquake damage. A building assigned to Seismic Design Category D, E or F that has sustained *disproportionate earthquake damage* shall be subject to the requirements for buildings with substantial structural damage to vertical elements of the lateral force-resisting system.

[BS] 405.2.3 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained *substantial structural damage* to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 405.2.3.1, and either repaired in accordance with Section 405.2.3.2 or repaired and retrofitted in accordance with Section 405.2.3.3, depending on the results of the evaluation.

Exceptions:

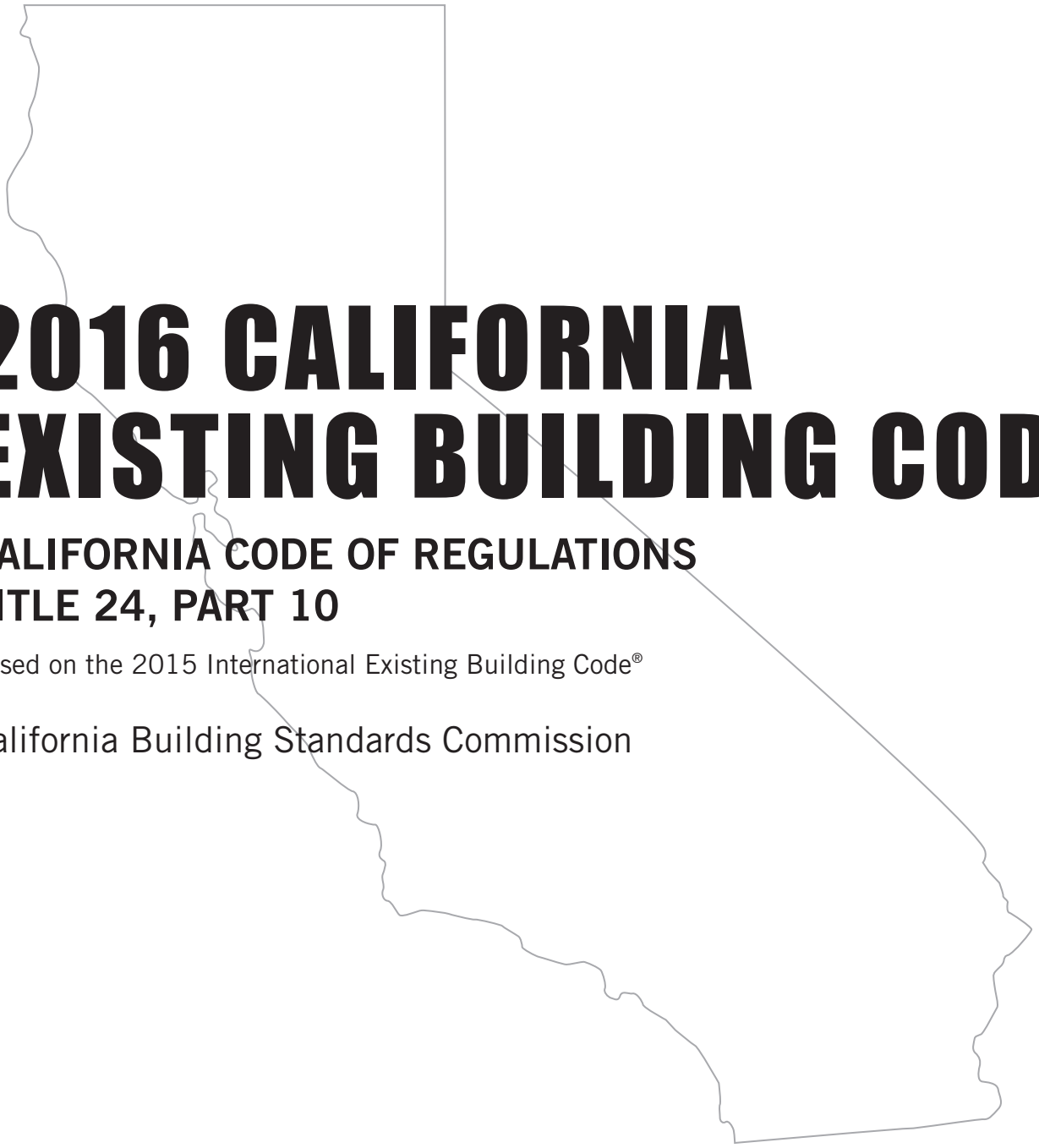
1. Buildings assigned to Seismic Design Category A, B or C whose *substantial structural damage* was not caused by earthquake need not be evaluated or retrofitted for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or retrofitted for load combinations that include earthquake effects.

[BS] 405.2.3.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the *code official*. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the *International Building Code* for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced seismic forces.

[BS] 405.2.3.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 405.2.3.1, then the damaged elements shall be permitted to be restored to their predamage condition.

IMPORTANT NOTICE

Act now to keep your code up-to-date. The purchase of this code includes a free subscription for all State-issued supplements and errata. To receive these important updates through 2019, you MUST register online www.iccsafe.org/CAL16



2016 CALIFORNIA EXISTING BUILDING CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24, PART 10

Based on the 2015 International Existing Building Code®

California Building Standards Commission

Effective January 1, 2017

For Errata and Supplement effective dates see the History Note Appendix

2016 CEBC

In-kind repair provisions shown in yellow.

CHAPTER 4

PRESCRIPTIVE COMPLIANCE METHOD

SECTION 401
GENERAL

401.1 Scope. The provisions of this chapter shall control the alteration, repair, addition and change of occupancy or relocation of existing buildings and structures, ***[BSC]*** *including state-regulated structures in accordance with Section 401.1.2.*

[HCD 1] *In addition to the requirements in this chapter, maintenance, alteration, repair, addition, or change of occupancy to existing buildings and accessory structures under the authority of the Department of Housing and Community Development, as provided in Section 1.8.2.1.1, shall comply with California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1.*

Exceptions:

1. Existing bleachers, grandstands and folding and telescopic seating shall comply with ICC 300.
2. ***[HCD 2]*** *For moved buildings and maintenance, alteration, repair, addition, or change of occupancy to existing buildings and accessory structures in mobilehome parks or special occupancy parks as provided in Section 1.8.2.1.3. See California Code of Regulations, Title 25, Division 1, Chapters 2 and 2.2.*
3. ***[HCD 1]*** *Limited-density owner-built rural dwellings.*

401.1.1 Compliance with other methods. Alterations, repairs, additions and changes of occupancy to or relocation of, existing buildings and structures shall comply with the provisions of this chapter or with one of the methods provided in Section 301.1.

401.1.2 Existing state-owned structures. [BSC] *The provisions of Sections 317 through 322 establish minimum standards for earthquake evaluation and design for retrofit of existing state-owned structures, including buildings owned by the University of California, the California State University and the Judicial Council.*

The provisions of Sections 317 through 322 may be adopted by a local jurisdiction for earthquake evaluation and design for retrofit of existing buildings.

401.2 Building materials and systems. Building materials and systems shall comply with the requirements of this section.

401.2.1 Existing materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 115.

[HCD 1] Local ordinances or regulations shall permit the replacement, retention and extension of original materials, and the use of original methods of construction, for any building or accessory structure, provided such building or structure complied with the building code provisions in effect at the time of original construction and the building or accessory structure does not become or continue to be a substandard building. For additional information, see Health and Safety Code Sections 17912, 17920.3, 17922(d), 17922.3, 17958.8 and 17958.9.

401.2.2 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

401.2.3 Existing seismic force-resisting systems. Where the existing seismic force-resisting system is a type that can be designated ordinary, values of R, Ω_0 and C_d for the existing seismic force-resisting system shall be those specified by the *California Building Code* for an ordinary system unless it is demonstrated that the existing system will provide performance equivalent to that of a detailed, intermediate or special system.

401.3 Dangerous conditions. The building official shall have the authority to require the elimination of conditions deemed dangerous.

401.4 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.*

401.5 Existing Group R Occupancies. [SFM] *See the California Residential Code for existing Group R-3 occupancies or Chapter 46 of the California Fire Code for all other existing Group R occupancies.*

SECTION 402
ADDITIONS

402.1. **General.** ***[BSC & HCD]*** Additions to any building or structure shall comply with the requirements of the *California Building Code* or *California Residential Code, as applicable*, for new construction. Alterations to the existing building or structure shall be made to ensure that the existing building or structure together with the addition are no less conforming to the provisions of the *California Building Code* or *California Residential Code*, *as applicable,* than the exist-

ing Code, if carbon monoxide detection is not already installed.

When the new addition requires carbon monoxide detection, carbon monoxide detection shall be installed in accordance with Section 915 of the California Building Code.

SECTION 403
ALTERATIONS

403.1 General. Except as provided by Section 401.2 or this section, alterations to any building or structure shall comply with the requirements of the *California Building Code* or *California Residential Code*, as applicable, for new construction. Alterations shall be such that the existing building or structure is no less conforming to the provisions of the *California Building Code* or *California Residential Code,* as applicable, than the existing building or structure was prior to the alteration.

Exceptions:

1. An existing stairway shall not be required to comply with the requirements of Section 1011 of the *California Building Code* where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1011.11 of the *California Building Code* shall not be required to comply with the requirements of Section 1014.6 of the *California Building Code* regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.
3. *[BSC] 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 403.3 through 403.4 are replaced by the requirements of Sections 317 through 322.*

403.1.1 Replacement, retention and extension of original materials. [HCD 1] *Local ordinances or regulations shall permit the replacement, retention and extension of original materials, and the use of original methods of construction, for any building or accessory structure, provided such building or structure complied with the building code provisions in effect at the time of original construction and the building or accessory structure does not become or continue to be a substandard building. For additional information, see Health and Safety Code Sections 17912, 17920.3, 17922(d), 17922.3, 17958.8 and 17958.9.*

[BS] 403.2 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the *California Building Code*, or Section R322 of the *California Residential Code,* as applicable, any alteration that constitutes substantial improvement of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance with the requirements for new construction for flood design.

For buildings and structures in flood hazard areas established in Section 1612.3 of the *California Building Code*, or Section R322 of the *California Residential Code,* as applicable, any alterations that do not constitute substantial improvement of the existing structure are not required to comply with the flood design requirements for new construction.

[BS] 403.3 Existing structural elements carrying gravity load. Any existing gravity load-carrying structural element for which an alteration causes an increase in design gravity load of more than 5 percent shall be strengthened, supplemented, replaced or otherwise altered as needed to carry the increased gravity load required by the *California Building Code* for new structures. Any existing gravity load-carrying structural element whose gravity load-carrying capacity is decreased as part of the alteration shall be shown to have the capacity to resist the applicable design gravity loads required by the *California Building Code* for new structures.

[BS] 403.3.1 Design live load. Where the alteration does not result in increased design live load, existing gravity load-carrying structural elements shall be permitted to be evaluated and designed for live loads approved prior to the alteration. If the approved live load is less than that required by Section 1607 of the *California Building Code*, the area designed for the nonconforming live load shall be posted with placards of approved design indicating the approved live load. Where the alteration does result in increased design live load, the live load required by Section 1607 of the *California Building Code* shall be used.

[BS] 403.4 Existing structural elements carrying lateral load. Except as permitted by Section 403.5, where the alteration increases design lateral loads in accordance with Section 1609 or 1613 of the *California Building Code*, or where the alteration results in a prohibited structural irregularity as defined in ASCE 7, or where the alteration decreases the capacity of any existing lateral load-carrying structural element, the structure of the altered building or structure shall be shown to meet the requirements of Sections 1609 and 1613 of the *California Building Code*. For purposes of this section, compliance with ASCE 41, using a Tier 3 procedure and the two-level performance objective in Table 301.1.4.1 for the applicable risk category, shall be deemed to meet the requirements of Section 1613 of the *California Building Code.*

Exception: Any existing lateral load-carrying structural element whose demand-capacity ratio with the alteration considered is no more than 10 percent greater than its demand-capacity ratio with the alteration ignored shall be permitted to remain unaltered. For purposes of calculating demand-capacity ratios, the demand shall consider applicable load combinations with design lateral loads or forces in accordance with Sections 1609 and 1613 of the *California Building Code*. For purposes of this exception, comparisons of demand-capacity ratios and calculation of design lateral loads, forces and capacities shall account for the cumulative effects of additions and alterations since original construction.

403.10 Smoke alarms. Individual sleeping units and individual dwelling units in Group R and I-1 occupancies shall be provided with smoke alarms in accordance with Section 1103.8 of the *California Fire Code.*

403.11 Refuge areas. Where alterations affect the configuration of an area utilized as a refuge area, the capacity of the refuge area shall not be reduced below that required in Sections 403.11.1 through 403.11.3.

403.11.1 Smoke compartments. In Group I-2 and I-3 occupancies, the required capacity of the refuge areas for smoke compartments in accordance with Sections 407.5.1 and 408.6.2 of the *California Building Code* shall be maintained.

403.11.2 Ambulatory care. In ambulatory care facilities required to be separated by Section 422.2 of the *California Building Code,* the required capacity of the refuge areas for smoke compartments in accordance with Section 422.4 of the *California Building Code* shall be maintained.

403.11.3 Horizontal exits. The required capacity of the refuge area for horizontal exits in accordance with Section 1026.4 of the *California Building Code* shall be maintained.

403.12 Carbon monoxide detection. [HCD] *Pursuant to Health and Safety Code Section 17926, carbon monoxide detection shall be provided in all existing Group R buildings, as required in Section 915 of the California Building Code, or Section R315 of the California Residential Code.*

When a fuel-burning appliance, fireplace, or forced-air furnace are added to an existing Group R building, not previously required to be provided with carbon monoxide detection, new carbon monoxide detection shall be installed in accordance with Section 915 of the California Building Code, or Section R315 of the California Residential Code.

SECTION 404
REPAIRS

404.1 General. Buildings and structures, and parts thereof, shall be repaired in compliance with Sections 401.2 and 404. Work on nondamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by Section 401.2, ordinary repairs exempt from permit in accordance with Section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

Exception: [BSC] *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 404.2 and 404.4 are replaced by the requirements of Sections 317 through 322.*

404.1.1 Replacement, retention and extension of original materials. [HCD 1] *Local ordinances or regulations shall permit the replacement, retention and extension of original materials, and the use of original methods of construction, for any building or accessory structure, provided such building or structure complied with the building code provisions in effect at the time of original construction and the building or accessory structure does not become or continue to be a substandard building. For additional information, see Health and Safety Code Sections 17912, 17920.3, 17922(d), 17922.3, 17958.8 and 17958.9.*

[BS] 404.2 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained substantial structural damage to the vertical elements of its lateral force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 404.2.1 through 404.2.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

[BS] 404.2.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the building official. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the *California Building Code* for wind and earthquake loads.

Wind loads for this evaluation shall be those prescribed in Section 1609 of the *California Building Code*. Earthquake loads for this evaluation, if required, shall be permitted to be 75 percent of those prescribed in Section 1613 of the *California Building Code*. Alternatively, compliance with ASCE 41, using the performance objective in Table 301.1.4.2 for the applicable risk category, shall be deemed to meet the earthquake evaluation requirement.

[BS] 404.2.2 Extent of repair for compliant buildings. If the evaluation establishes compliance of the predamage building in accordance with Section 404.2.1, then repairs shall be permitted that restore the building to its predamage state.

[BS] 404.2.3 Extent of repair for noncompliant buildings. If the evaluation does not establish compliance of the predamage building in accordance with Section 404.2.1, then the building shall be rehabilitated to comply with applicable provisions of the *California Building Code* for load combinations that include wind or seismic loads. The wind loads for the repair shall be as required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be as required by the *California Building Code*. Earthquake loads for this rehabilitation design shall be those required for the design of the predamage building, but not less than 75 percent of those prescribed in Section 1613 of the *California Building Code*. New structural members and connections required by this rehabilitation design shall comply with the detailing provisions of the