

**FINAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
OFFICE OF STATEWIDE HEALTH PLANNING AND DEVELOPMENT (OSHPD)

REGARDING THE
CALIFORNIA BUILDING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2, VOLUMES 1 & 2
STRUCTURAL**

The Administrative Procedure Act requires that every agency shall maintain a file of each rulemaking that shall be deemed to be the record for that rulemaking proceeding. The rulemaking file shall include a final statement of reasons. The Final Statement of Reasons shall be available to the public upon request when rulemaking action is being undertaken. The following are the reasons for proposing this particular rulemaking action:

UPDATES TO THE INITIAL STATEMENT OF REASONS

The Office of Statewide Health Planning and Development (OSHPD) finds that no revisions have been made which would warrant a change to the initial statement of reasons for the following proposed actions:

STATEMENT OF SPECIFIC PURPOSE AND RATIONALE:

**Title 24, Part 2, Volume 1
Chapter 1 – Scope and Administration**

Section 102.4 – Amendment in this chapter is required to ensure consistency between the California Building Standards Code and Reference Standards.

**Title 24, Part 2, Volume 1
Chapter 14 – Exterior Walls**

Section 1403.2 – The exception relating to OSHPD 1, 2, & 4 is deleted since the reference to Title 24, Part 6, California Energy Code, is removed from the section by reference to another section of this code.

Section 1408.3 (2007 CBC) – This section is deleted because it is redundant. It refers to requirements in Chapter 17A.

**Title 24, Part 2, Volume 1
Chapter 15 – Roof Assemblies and Rooftop Structures**

Section 1511.6 (2007 CBC) – This section is deleted because it is redundant. It repeats requirements that are in Section 104.11 and the roof systems testing requirements that are covered in Section 1504.3.1.

**Title 24, Part 2, Volume 2
Chapter 16 – Structural Design**

Section 1605.3.2 – The amendment in this section is not necessary, since most anchorage is currently qualified for cyclic forces expected during earthquake.

Section 1609.1.1 and 1609.6 (2007 CBC) – The California amendment is no longer necessary because it has been incorporated into model code. Deleted California amendments are not shown; only new model code amendments are shown to avoid confusion.

Section 1609.4 – The amendment to this section is not necessary. With the availability of Google maps and other internet tools site exposure conditions can be easily verified.

**Title 24, Part 2, Volume 2
Chapter 16A – Structural Design**

Section 1601A.1 – Section references are revised because California Chapter 1 in the 2007 CBC will be relocated to Chapter 1A in the 2010 CBC.

Section 1602A.1 – Section reference is revised because Appendix Chapter 1 in the 2007 CBC will be relocated to Chapter 1 in the 2010 CBC.

Section 1603A.1.5 - Structural irregularities (defined in ASCE-7 section 12.3) can result in restrictions on building height, prohibition of certain configurations, increased design forces, additional analytical requirements, restriction of permissible analytical procedures, greater building separations, or additional detailing requirements for certain structural elements. It is often not evident whether one or more irregularities are applicable to a structure, because many of them require structural analysis to determine their applicability. This information is useful for building officials, plan checkers, peer reviewers, and for structural engineers in future building additions and/or alterations.

Table 1604A.3 –Veneer wall deflection limit is revised to be consistent with Section 1405.10.

Section 1604A.3.7 – Reference for wood diaphragm aspect ratios is changed to American Forest & Paper Association Special Design Provisions for Wind and Seismic, 2008 (AF & PA SDPWS -2008) since equivalent table in Chapter 23 is deleted in the 2009 IBC.

Section 1604A.3.7.1 – This section is deleted to avoid duplication with ASCE 7 Section 12.12.4.

Section 1605A.1.1 - This amendment is necessary for consistency with Section 1615A.1.10. Stability requirements in Section 1615A.1.10 are deleted and all the requirements are consolidated into this section.

Section 1605A.3.2 – ASCE 7-05 Section 13.4.2 is revised in Section 1615A.1.14 of this code, making the amendment unnecessary.

Section 1605A.4 – Existing amendment deleting exception is retained.

Section 1607A.11.5 – Relocated from CBC 2007 Section 1607A.11.2.2.

Section 1607A.13 – Editorial change.

Section 1609A.1.1 and 1609A.6 (2007 CBC) – California amendment is no longer necessary because it has been incorporated into model code. Deleted California amendments are not shown; only new model code amendments are shown to avoid confusion.

Section 1609A.4 – With availability of Google maps and other internet tools, a detailed verification submittal is no longer necessary.

Section 1613A.1.1 – This section is deleted since requirements in the section duplicate alternative system requirements in the code.

Section 1613A.2 – Definition of “Next Generation Attenuation” (NGA) relations is added for use in Geotechnical/Geohazard reports. Some definitions are deleted because they are no longer used in the code.

Section 1613A.6.3 – Requirements for design of anchorage and bracing in accordance the 2010 CBC is added, since equivalent provisions in NFPA – 13 are not consistent with 2010 CBC.

Section 1613A.6.4 – This section is deleted for consistency with Chapter 21A.

Section 1613A.6.7 – Importance factor “I” is deleted from the denominator to ensure that buildings in all Occupancy Category having same forces and stiffness will have same building separation. Amendment in this section will make new requirement consistent with current requirement in the CBC 2007 and past requirement in the CBC 2001.

Importance factor (I) in the denominator of ASCE 7-05 Equation 12.8-15 was introduced to be consistent with introduction of drift limit based on Occupancy Category in Table 12.12-1. To keep the building separation requirements unchanged ASCE 7-05 Section 12.12.3 required algebraic summation of deflection to calculate the building separation instead of square root of the sum of the squares of deflection used in the previous code.

Since new amendment will use square root of the sum of the squares, it should be based on deflection of two buildings which require the deletion of importance factor in the denominator. This amendment will keep the building

separation requirement the new code equivalent to what is required currently in the CBC 2007 and what was required by the 2001 in the past. There is no known engineering study to justify a change in building separation requirements.

Section 1613.6.8 (2009 IBC) – Deleted redundant requirements in this section since OSHPD amendments in Section 1615A cover the requirements.

Section 1613.7 (2009 IBC) – This section is deleted to retain the minimum wall force requirements in ASCE 7-05 for high seismic areas.

Section 1614A.1.13 (2007 CBC) – Deleted requirements are redundant because of the amendments to ASCE 7-05 in Sections 1615A.1.7, 1615A.18 and 1615A.1.19.

Section 1614A.1.14 (2007 CBC) – Deleted requirements are consolidated into amendments in Section 1615A.1.21.

Section 1614A.1.21 (2007 CBC) – Requirements moved to Section 1708A.5.

Sections 1614A.1.24 (2007 CBC), 1614.1.26 (2007 CBC) through 1614A.1.31 (2007 CBC) – These sections are deleted to permit design of buildings with base isolators and dampers without non-linear response history analysis in areas where site spectral acceleration at one second (S_1) is less than 0.6g.

Section 1615A.1.1 – This section is revised to clarify requirements for structural design criteria and peer review requirements in the 2007 CBC and ASCE 7-05.

Section 1615A.1.2 – This section codifies OSHPD CAN 2-1614A.1.2. This simplify and reduce the site-specific ground motion requirements.

Section 1615A.1.4 – Deleted requirements is covered in ASCE 7-05 Section 12.12.4.

Section 1615A.1.9 – This proposal is based on modification to ASCE 7 proposed by SEAOC to eliminate affect of minimum diaphragm shear on amplified loads for collector design, since minimum shear is not tied to “R” factor.

Section 1615A.1.10 (2007 CBC) – Deleted requirements for stability check in this section is picked-up by the model code in Section 1605A.1.1.

Section 1615A.1.11 – This section codifies OSHPD CAN 2-1613A.1.

Section 1615A.1.12 – This section is revised to make it consistent with ASCE 7-10 and current OSHPD practice. This relocates current exemption in the CAC to the CBC.

Section 1615A.1.14 – This section is revised to make it consistent with ASCE 7-10. Exceptions # 1 to ASCE 7-05 Section 13.4.2.3 codify requirement in the OSHPD CAN # 2-1912A.1 & # 2 relocate exception to the CBC 2007 Section 1908A.1.47 (exception to ACI 318-05 Sections D.3.3.4 & D.3.3.5)/IBC 2009 Section 1908A.1.9 (exception to ACI 318-08 Sections D.3.3.4 & D.3.3.5).

Section 1615A.1.15 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.16 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.17 – This section is revised to make it consistent with requirements of ASCE 7-05 Section 13.4 for seismic design categories D, E, and F.

Section 1615A.1.20 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.21 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.22 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.25 – This amendment is added to permit Next Generation Attenuation (NGA) relations for ground motions.

Section 1615A.1.26 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.27 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.28– This section is revised to provide acceptance criteria for non-linear response history analysis explicitly. These requirements are based on International Existing Building Code (IEBC), which is a reference standard for the 2009 IBC.

Section 1615A.1.32 – This section is revised to make it consistent with ASCE 7-10.

Section 1615A.1.33 – This section is revised to permit linear analysis of base isolated buildings.

Section 1615A.1.34 – This section is revised to permit linear analysis of base isolated buildings.

Section 1615A.1.35 – This section is revised for consistency between analysis requirements in ASCE 7-05 Chapter 18 and the materials chapters of the 2010 CBC.

Section 1615A.1.36 – This section codifies OSHPD CAN 2-1614A.1.2 and makes the section consistent with ASCE 7-10.

Section 1615A.1.37 – Requirements in the 2007 CBC Sections 1614A.1.20.g and 1614A.1.22 are consolidated in this section. This section also clarifies that earthquake instrumentation and monitoring equivalent to those of a base isolation system also apply to buildings with a damping system or undefined lateral force resisting system in accordance with Section 104.11.4 of the Appendix Chapter 1.

Section 1615A.1.38 – Non-mandatory requirements to achieve operational performance level is added to the code. SB 1953 will require all buildings to satisfy the operational performance level by 2030.

Title 24, Part 2, Volume 2

Chapter 17 - Structural Tests and Special Inspections

Section 1704.4.2 – This section is deleted because it is a duplicate of the requirement in 2007 CAC Section 7-145(a) 6.A.

Title 24, Part 2, Volume 2

Chapter 17A - Structural Tests and Special Inspections

Sections 1704A.2.1 and 1704A.2.2 – This section codify current OSHPD practice of not establishing approved fabricators and do not permitting any exception to special inspection requirements for approved fabricators.

Section 1704A.3.1.4 – Deleted parts are picked-up by model code. Welder qualification is required by AWS.

Section 1704A.3.2.1 – This section is not required since shop and field fabrications are treated equally.

Section 1704A.4 – Existing amendment retained.

Section 1704A.4.2 – This section is deleted since requirement in this section is covered by Section 1704A.3.1.

Table 1704A.4 (CBC 2007) – California amendments in this table (Items # 3 and # 12) have been incorporated in model code in Table 1704.4 (Items # 3 & 4) and therefore are not being carried forward to 2010 CBC.

Section 1704A.4.4 – This section is revised for consistency with Table 1808A.8.1.

Table 1704A.4.5.1 – Inspection requirements for post-installed anchors in glass unit masonry and masonry veneer, which are not considered as part of the lateral force resisting system, is deleted.

Table 1704A.4.5.2 (CBC 2007) – Deleted requirement is redundant.

Section 1704A.4.6 – This section is revised for consistency with current practice.

Section 1704A.8.1 – Deleted section is redundant.

Section 1704A.9.1 – Section is deleted since requirements are picked-up by model code.

Section 1704A.16 – Requirements for reinforced gypsum inspection is deleted since it is considered an alternative system in accordance with the Chapter 19A.

Section 1707A.4 – Exception is deleted since gypsum board shear walls are not permitted by OSHPD. This is consistent with Section 1707A.3.

Section 1707A.9 – This amendment will provide inspection requirements for dampers and isolators equivalent.

Sections 1708A.1.1 & 1708A.1.2 (2007 CBC) – California amendments are picked-up by model code.

Section 1708A.1.3 – Model Code errata.

Section 1708A.1.4 – Testing requirement for damping devices which are not addressed in the model code is added.

Section 1708A.4 – This section codifies OSHPD CAN 2-1708A.5.

Section 1708A.5 – Testing requirements for damping system, which are not currently addressed in the code, are added. Also, prototype and production testing requirements for Isolator units and damping devices, which are currently in the 2007 CBC Section 1614A.1.21 and 1614A.1.31 are consolidated into this section.

Title 24, Part 2, Volume 2
Chapter 18 – Soils and Foundations

Section 1802.8 - All requirements beyond the model code geotechnical report and supplemental ground-response reports are deleted. Revision to model code Chapter 18 adequately address the geotechnical report requirements. Supplemental ground response requirements in ASCE 7 Chapter 21 are adequate for OSHPD 2 buildings.

Section 1810.3.1.5.1 – Seismic requirements are added for helical piles, which are not in the model code.

Section 1810.3.10.4 – Alternative system submittal requirement in the code is removed by explicitly providing requirements for use of micropiles in Seismic Design Categories D, E or F.

Title 24, Part 2, Volume 2
Chapter 18A – Soils and Foundations

Section 1802A.2.8 (2007 CBC) – California amendments have been incorporated into the model code in Chapter 19A.

Section 1803A.1 - Reference to California Geological Survey (CGS) is deleted since the enforcement agency can choose a consultant other than CGS and in certain cases may not pick any consultant.

Section 1803A.2 - Amendment relocated from Section 1802A.2.

Section 1803A.6.1.2 – Deleted requirements are covered by Section 1803A.5.11 and 1803A.5.12.

Section 1803A.6.2 – Section is revised to require Next Generation Attenuation (NGA) relations, which will be the basis of future building code, for site specific ground motion analysis.

Section 1806A.1 (CBC 2007) - Requirements are being deleted since they duplicate requirements in Section 1802A.2.7.

Section 1807A.1.1 – Section is revised to make it consistent with requirements in Section 1803.5.12.

Section 1807A.1.3 – Deleted provisions are not permitted in Seismic Design Categories D, E, and F, which are the only design categories permitted by OSHPD.

Section 1807A.2 – Amendment relocated from Section 1806A.

Section 1807A.2.2 – Section is revised to make-it consistent with requirements in Section 1803.5.12. Deleted existing amendments are redundant since lateral soil pressure is provided by the geotechnical engineer.

Section 1808A.2 – Editorial changes made to existing provisions for clarity.

Section 1808A.8.5 – Concrete cover requirements in defined in Table 1808.8.2 and ACI 318-08 Section 7.5.2.1 added tolerance requirement for concrete cover, which removed the rationale for existing amendment.

Section 1808A.8.6 – Column confinement requirement for piles just below cap and free standing piles in accordance with ACI 318-08 is retained.

Section 1809A.13 (Exception) – Provision for alternative to prescriptive provisions, which are permitted on a case by case basis, is codified.

Section 1810A.2.23.2.4 (CBC 2007) – California amendment is picked-up by model code in Section 1810A.2.4.1.

Section 1810A.3.1.5.1 – Seismic requirements for helical piles are added. ICC AC 358, which is the basis of helical piles provisions in 2009 IBC, limited helical foundations to Seismic Design Categories A, B, and C. When helical foundation requirements were adopted in 2009 IBC, restriction for Seismic Design Categories D, E, and F were omitted accidentally.

Section 1810A.3.1.5.1 – Section is deleted since this is in conflict with ACI 31-08 requirements for deep foundation.

Section 1810A.3.8.3.2 – Requirements for Seismic Design Category C are deleted since Seismic Design Category C are not permitted by Section 1613A.

Section 1810A.3.9.4.2.1 - Section is revised for consistency with ACI 31-08 requirements for deep foundation.

Section 1810A.3.10.4 – Alternative system submittal requirement in the code is removed by explicitly providing requirements for use of micropiles in Seismic Design Categories D, E or F.

Section 1810A.4.7 – Revision in model code to design requirements for enlarged pile made them equivalent to other cast-in-place concrete, which removed the rationale for original amendments.

Title 24, Part 2, Volume 2

Chapter 19 – Concrete

Section 1911.1.1 – This section codifies OSHPD requirements currently contained in CAN 2-1912A.1.

Sections 1912.1.1, 1912.1.1, 1912.1.2, and 1912.2 – These sections codify OSHPD requirements currently contained in CAN 2-1912A.1 and 2-1916A.8.

Title 24, Part 2, Volume 2

Chapter 19A – Concrete

Section 1903A.3 – Since durability is dependent on components of cementitious materials & is required for verification of compliance with ACI 318-08 Table 4.4.2, reporting requirement for them is added.

Section 1903A.5 – Discontinuous steel fibers had not yet been tested for use in high seismic regions; therefore they are prohibited in this section.

Section 1905A.1.1 – Section is revised to make it consistent with Table 1808A.8.1.

Section 1905A.2 – Requirement that is duplicate with OSHPD's Testing, Inspection, and Observation (TIO) program in accordance with the California Administrative Code is deleted.

Section 1905A.8 – This requirement is not necessary because of changes in construction practice.

Section 1907A.7.1 – Addition of tolerances for concrete cover in ACI 318 Section 7.5.2.1 removed the original rationale for this amendment.

Section 1908A.1.1 – Word "basis" is deleted to make code consistent with ASCE 7 terminology.

Section 1908A.1.6 (2007 CBC) – ACI 318-08 revised this section to eliminate the rationale for this amendment.

Sections 1908A.1.8 (2007 CBC) and 1908A.1.6 (2007 CBC) – Redundent sections deleted.

Section 1908A.1.13 (2007 CBC) – Simplification provided by this section, which were intended for hand calculations, is no longer necessary since most of calculations are now done by the computer software. If soil pressures are calculated by neglecting vertical effect of earthquake as permitted by exception to ASCE 7 Section 12.4.2.2, this simplification will give incorrect results.

Section 1908A.1.14 (2007 CBC) – California amendments adopted by 2009 IBC in Section 1605A.1.1.

Section 1908A.1.15 (2007 CBC) – Deleted requirements are covered by ASCE 7.

Section 1908A.1.16 – Deleted paragraphs are pointers to other sections of the code, which are not necessary.

Section 1908A.1.18 (2007 CBC) – This amendment is no longer necessary. All requirements for precast walls in ACI 318 Chapter 16 apply to site-cast precast wall panels based on definition of precast wall in ACI 318 Section 2.2.

Section 1908A.1.23 (2007 CBC)– Simplification provided by this section, which were intended for hand calculations, is no longer necessary since most of calculations are now done by the computer software. In addition, changes in ACI 318-08, which changed concrete strength at which prestress can be applied, make this incorrect.

Section 1908A.1.24 (2007 CBC) – This section is deleted because requirements in this section are not fully consistent with other code provisions and uniform force method in the ACI 318-08 made this provision unnecessary. In addition, Structural Integrity requirements are covered in new code Section 1614A.

Section 1908A.1.25 (2007 CBC) - This section is delete because it is redundant.

Section 1908A.1.26 (2007 CBC) - This section is delete because it is redundant

Section 1908A.1.30 (2007 CBC) – Deleted requirements in this section is picked-up by ACI 318-08.

Section 1908A.1.23 – This section is not permitted by OSHPD for consistency with Section 1615A.1.3.

Section 1908A.1.30 – This section is modified to make it consistent with amendments in Chapter 16A and 23A.

Section 1908A.1.31 – Section 1615A revised ACE 7-05 Section 13.4.1 and 13.4.2, making deleted exceptions unnecessary.

Section 1908A.1.33 (2007 CBC) – Deleted requirements in this section is picked-up by ACI 318-08.

Section 1908A.1.34 (2007 CBC) – ACI 318 Section 21.6.4.5, which limit maximum tie spacing to 6”, is considered to provide adequate protection, hence this amendment is deleted.

Section 1908A.1.35 (2007 CBC) – ACI 318 Section 21.6.4.5, which limit maximum tie spacing to 6” , is considered to provide adequate protection, hence this amendment is deleted.

Section 1908A.1.36 (2007 CBC) – Deleted requirements in this section is picked-up by Section 1908A.1.22.

Section 1908.1.7 (2009 IBC) – This section is deleted because it is in conflict with Section 1909A.

Section 1908.1.8 (2009 IBC) – This section is deleted because it is in conflict with Section 1909A.

Section 1908A.1.47 (2007 CBC) – Deleted requirements in this section is picked-up by ACI 318.

Section 1909A – This section is deleted for consistency with Section 1908A.1.22.

Section 1911A.1.1 – This section codifies OSHPD requirements currently contained in CAN 2-1912A.1.

Sections 1912A.1.1– This sections codify OSHPD requirements currently contained in CAN 2-1912A.1.

Section 1913A.3 – Aggregate size gradation for shotcrete in shear wall is specified to ensure good performance of shear walls during earthquake.

Section 1913A.11 – California amendment incorporated in model code Section 1913A.5.

Sections 1916A.2 & 1916A.4 – Contents of Sections 1916A.2 & 1916A.2 are consolidated into Section 1916A.2. Also, reference to 2500 psi concrete is deleted since it is not permitted anymore.

Section 1916A.7 – This section codifies OSHPD requirements for post-installed concrete anchor testing currently contained in CAN 2-1916A.8.

Section 1917A.3 – This section codifies current OSHPD practice for concrete strengthening for gravity frame members using externally bonded Fiber Reinforced Polymer (FRP).

Title 24, Part 2, Volume 2

Chapter 21A - Masonry

2101A.1.3 – This section consolidate existing prohibition in various section of the 2007 CBC with no change to current requirements.

Section 2103A.8 – This amendment will permit use of class M mortar in addition to class mortar, since both can provide equivalent performance. Deleted section is redundant. Reference to ASTM C 144 is covered in ASTM C 270.

Section 2103A.12.2 – Repeal restriction on coarse aggregate, since ASTM C 404 requirement is more stringent.

Section 2103A.12.3 - Repeal reference to ASTM C 404, since reference to the standard is in ASTM C 476.

Section 2103A.14.4 – Repeal limitations on carbon black more restrictive in ACI 530 Section 2.6 A.2.

Section 2104A.1.1 – This section codify current practice.

Section 2104A.2 (2007 CBC) – Amendments in this section for corbelled masonry is deleted, since new provisions in the 2010 CBC (2009 IBC) Section 2104A.2 is adequate.

Section 2104A.5 – Existing amendment for grouted masonry is retained with editorial changes. Pointers to other sections in the code, which are not necessary, have been deleted.

Section 2105A.2.1 (Exception) - Increase maximum value of f'_m to 3000 psi in recognition of improved masonry design and QA standards.

Section 2105A.2.2.3 – Redundent section is deleted, since requirements are covered in ASTM C 1314.

Section 2105A.6 – Redundent section is deleted.

Section 2107A.1.1 – Design assumptions are deleted because they are not necessary for design.

Section 2107A.9 – Existing requirements in the CBC 2007 Section 2107A.12 is retained.

Section 2107A.10 (2007 CBC) – Existing requirements is relocated to Section 2101A.1.3.

Section 2107A.12 (2007 CBC) – Requirement is picked-up in the TMS 402 Section 2.3.3.4.

Section 2108A.2 (2007 CBC) – Existing requirements is relocated to Section 2101A.1.3.

Section 2113A.5 (2007 CBC) – California amendments picked-up by 2009 IBC in Sections 2113A.4 & 2113A.5.

Title 24, Part 2, Volume 2

Chapter 22A - Steel

Section 2204A.1.1 – This section is revised to be consistent with requirements in AISC 341-10.

Section 2204A.1.2 – This section is revised to be consistent with requirements in AISC 341-10.

Section 2204A.1.3 – This section is revised to be consistent with requirements in AISC 341-10.

Section 2205A.1.1 – Existing section, which was intended for bolted moment connections, is not necessary since OSHPD currently do not permit bolted moment connections.

Section 2205A.5.1 – This section is revised to permit Welded Unreinforced Flange – Welded Web (WUF-W) moment connections, which is adopted by AISC 341-05 Supplement # 1. This section will also prohibit bolted moment connections approved through AISC 341-05 Supplement # 1, since they are not tested to OSHPD seismic pre-qualification requirements.

Section 2205A.5.2 (2007 CBC) – This section is deleted since any structural slab seems to provide adequate rotational restraint.

2206A.4 – Deleted requirement is redundant since OSHPD does not permit deferred approval of primary gravity load resisting system.

Section 2209A.3 – Redundant test requirements is deleted.

2210A.3.2 – Errata.

Section 2210A.3.3 – Section is revised to be consistent with the California Administrative Code (Title 24, Part 1) Section 7-126.

2210A.6 – Editorial.

Section 2212A.1 (2007 CBC) – California amendments incorporated in the model code (2009 IBC).

Section 2212A.4 (2007 CBC) – Redundant test requirements (which is also covered in Section 2205A) is deleted.

Title 24, Part 2, Volume 2
Chapter 23 - Wood

Section 2301.2 - Log structure is not considered appropriate for occupancy category IV structures in high seismic region, since ASCE 7 or building code do not provide seismic co-efficient for log structures.

Section 2303.1.3.1 – Reference to other code sections are deleted since they had been causing confusion as to exclusive nature of those requirements. Construction documents shall satisfy all the code requirements.

Section 2303.4.3.1 – Revisions to Section 2303.4.1 in 2009 IBC eliminated the basis for deleted parts of the amendment.

Section 2303. 3.4 – Reference to other code sections are deleted since they had been causing confusion as to exclusive nature of those requirements. Construction documents shall satisfy all the code requirements.

Section 2304.4.1 – Reference to other code sections are deleted since they had been causing confusion as to exclusive nature of those requirements. Construction documents shall satisfy all the code requirements.

Section 2304.6.1 – Revision is necessary to provide proper importance factors for Occupancy Category IV buildings.

Section 2305.1.2 – 2009 IBC removed the duplicate requirements between code and SDPWS removing the basis for deleted amendments.

The design shear values for wood structural panel shear walls with staples are based on monotonic testing. Earthquakes load shear walls in a repeating fully reversible manner. Tests performed by the Structural Engineers Association of California indicate that shear assemblies constructed with staples deteriorate badly under cyclical loading.

Prohibition on unblocked shear walls in the CBC 2007 Section 2305.3.3 is retained for high seismic region.

Section 2305.1.4 - Current design provisions require calculation of the capacity of sill plate anchor bolts using the provisions of ACI 318 Appendix D, however, those methods result in shear capacities far smaller than historical values using provisions of earlier codes and standards. Recent experiments specifically focused on this connection have revealed that the actual capacities exceed those historically used and support a return to determining the sill bolt shear capacity based upon its capacity in the wood sill plate member. The experiment by SEAOC showed that concrete failure modes do not control the capacity of these connections when certain embedment, edge and end distances are maintained. Therefore, it is proposed that Section 2305.1.4 clearly state that the minimum design capacity be based upon the lateral design value of the bolt attaching a wood sill plate to concrete, as determined using AF&PA NDS.

Section 2306.4 – This section is prohibited for consistency with section 1615A.1.3.

Section 2306.4 – Editorial.

Section 2308.2.8 – Amendments to permit conventional light-frame construction for OSHPD 1 & 4 buildings, when sufficient calculation to justify the design is provided, is deleted because it is in conflict with Section 2308.2.6. In addition, new requirements in AF & PA SDPWS for uplift and shear resistance of wood panels resisting out-of-plane forces, which is an important consideration for performance of Occupancy Category IV structures, is not addressed in conventional light-frame construction provisions.

Title 24, Part 2, Volume 2
Chapter 24 – Glass and Glazing

Section 2403.1.1 - Labeling requirements in the model code is considered in adequate.

Section 2403.6 – Redundant requirements in this section is deleted.

Section 2406.1.5 – Redundant requirements in this section is deleted.

Title 24, Part 2, Volume 2
Chapter 25 – Gypsum Board and Plaster

Section 2501.2 – Editorial.

Section 2503.2 – Editorial.

Section 2506.2.1.1 – Redundant requirements in this section is deleted. Section 2506.2.1 adequately covers the requirement.

Title 24, Part 2, Volume 2
Chapter 34 - Existing Structures

Section 3401.4 – Compliance with International Existing Building Code (IEBC), which in general permits evaluation and retrofit design for lateral forces at 75% of the California Building Code (CBC) force level, is considered inappropriate for healthcare facilities; therefore it is prohibited.

Section 3401.5 – Amendments in this section are intended to permit the use of ASCE 41-06 in OSHPD 3 structures as a voluntary standard. These amendments are necessary since the adoption of structural integrity provisions in Chapter 16A may limit use of basic code requirements for some high-rise buildings.

Section 3401.5.2 - ASCE 41-06 is a voluntary standard which may be used when basic code requirements are too onerous. There are a number of OSHPD 3 buildings which are designed voluntarily as an Occupancy Category IV structures even though they are not required to do so. Amendment in this section for Occupancy Category IV structures will permit the Owners of high-rise OSHPD Occupancy Category IV structure to maintain their current Occupancy Category.

Title 24, Part 2, Volume 2
Chapter 34A - Existing Structures

Section 3401.4 (2009 IBC) –International Existing Building Code (IEBC), in general, permit evaluation and retrofit design for lateral forces at 75% of the California Building Code (CBC) force level. This is considered inadequate for hospitals which are expected to remain operational following design earthquake; therefore compliance alternative using IEBC is deleted.

Sections 3402A – Definitions in this section are revised to make them consistent with code changes in other section of this chapter.

Definition of substantial structural damage is revised to permit reduction of capacities up to 10% of existing, provided remaining capacity is not less than 75% of the minimum required by the code for new buildings. This will ensure that nonconforming buildings will not be degraded to a level where life safety is compromised.

Section 3403A.4.1 – Pre-Northridge moment connections, which had shown poor performance during Northridge earthquake are designated as ordinary moment connections based on observed poor performance.

Section 3404A.1 – Reference to Section 3401.4 is deleted since that section is not adopted by OSHPD.

Section 3404A.4.1 – Pre-Northridge moment connections, which had shown poor performance during Northridge earthquake are designated as ordinary moment connections based on observed poor performance.

Section 3404A.5 – Design demand and capacity requirements for new structural/nonstructural elements and demands for alteration of existing members, which are part of the voluntary seismic improvement, are defined explicitly in this section. Without quantitative definition of demand for voluntary upgrade, project specific approval from the building officials will be required.

Most voluntary upgrade at OSHPD facilities are for partial fulfillment of mandatory upgrade required by the CAC, 2007 Chapter 6. Hence, it is essential that new elements and altered existing elements are designed to new building seismic demand as much as practical, where final goal is to improve the building to comply with current or future code requirements. Exception to this section will permit voluntary upgrade to life safety level. Voluntary upgrade of hospital buildings, which are supposed to remain functional following design earthquake, below the life safety level is unacceptable.

For pre-1973 buildings, design demand can be based on Section 3411A, which permits incidental and minor alterations with importance factor equal to 1.0 ($I = 1.0$).

All voluntary seismic improvements are permitted to be based on design demand and capacities in accordance with ASCE 41-06.

Section 3405A – Revision in this section will ensure that repaired buildings will have capacities equivalent to other buildings with additions or modifications in accordance with Section 3403A.

Section 3405A.2.1 – Pre-Northridge moment connections, which had shown poor performance during Northridge earthquake are designated as ordinary moment connections based on observed poor performance.

Section 3405A.2.3 – Design demand for repair to noncompliant buildings is set at ninety percent but the evaluation at 75% is permitted by Section 3405A.2.1.

Section 3408A.4 – Pre-Northridge moment connections, which had shown poor performance during Northridge earthquake are designated as ordinary moment connections based on observed poor performance.

Section 3411 (2009 IBC) – Existing amendment deleting this section is continued. Accessibility requirements are addressed in Chapter 11B.

Section 3412 (2009 IBC) – This section is deleted since requirements in this section is not permitted in Group I buildings in accordance with Section 3412.2 and all buildings for OSHPD 1 & 4 are in Group I.

Section 3411 – This section is revised by deleting requirements that are now addressed by model code in Sections 3403A, 3404A and 3405A.

Section 3412 (2009 IBC) – This section is deleted since requirements in this section is not permitted in Group I buildings in accordance with Section 3412.2 and all buildings for OSHPD 1 & 4 are in Group I.

Section 3413A.1.2 – This section is revised to permit reduced ground motions for some existing buildings equivalent to what is permitted for new buildings under ASCE 7. There is no rationale to evaluate or retrofit existing buildings for ground motions higher than those for new buildings.

Section 3413A.1.5 – This section is revised to permit nonlinear static procedure with linear dynamic analysis for low rise buildings where higher mode affect are significant. Intent of the original amendment was for high rise buildings, this amendment clarifies the intent.

Section 3413A.1.18 – Editorial.

Section 3413A.1.24, 3513A.1.25 & 3513A.1.28 – These amendments are relocated to Chapter 17A and are consolidated with similar requirements for the isolators and dampers for new buildings for uniformity.

Section 3415A – Authority of the enforcement agency to install earthquake monitoring instruments in existing buildings, which was part of the CBC 2001 and other UBC based Code, is restored. This will permit OSHPD to install and maintain earthquake monitoring instruments at existing hospitals at OSHPD's expense; OSHPD shall also be responsible for data retrieval and maintenance of these instruments.

Title 24, Part 2, Volume 2 Chapter 35 - Referenced Standards

References in this chapter are revised for consistency with amendments in all other Chapters.

Title 24, Part 2, Volume 2 Appendix J – Grading

Section J106.2 – This section shall be applicable only when existing or new operational OSHPD 1 & 4 facilities are directly affected and will not apply to construction means and methods where operating hospitals are not affected. This section is purposely located in an appendix instead of Chapter 33 to ensure that requirements will only be used when functional OSHPD 1 & 4 facilities are affected. This section essentially clarify how the requirement of Section 1603A.1.10 (CBC 2007 Section 1604A.11) can be satisfied for shoring, when they affect operating hospitals and is not a new requirement.

Shoring design for construction means and methods are not normally under the OSHPD jurisdiction, since they are regulated by Cal-OSHA and local jurisdiction. Shoring used only as means and methods do not require OSHPD review or construction observation.

This section codifies current OSHPD practice for earth retaining shoring design, construction, monitoring and inspection when operating OSHPD 1 & 4 facilities are affected. OSHPD usually receive about 12 to 15 shoring design criteria each year that affect operating hospitals. Design criteria process is very time consuming for the hospital owners and OSHPD. To expedite the review process OSHPD standardized the shoring design criteria for the last several years. Requirements in this section will codify what had been successfully used in OSHPD projects for the last several years with positive feedback from shoring designers and contractors. Couple of SEAOSC subcommittees working on shoring provisions for future code reviewed the proposed regulation and some of them their constructive comments have been incorporated.

Temporary is defined by the California Building Code Section 108.1 as not more than 180 days. This section will define shoring as temporary up to 1 year, thereby not requiring design to incorporate seismic forces or corrosion protection for shoring that are required for less than 1-year.

Health and Safety Code (H & SC) §129680 requires that hospital buildings that house patients who have less than the capacity of normally healthy persons to protect themselves, and that must be reasonably capable of providing services to the public after a disaster, shall be designed and constructed to resist, insofar as practical, the forces generated by earthquakes, gravity, and winds. In order to accomplish this purpose, the office shall propose proper building standards for design based upon current knowledge, and provide an independent review of the design and construction of hospital buildings.

Shoring design in accordance with this section for operational OSHPD 1 & 4 facilities will ensure that OSHPD complies with statutory mandate contained in H & SC §129680.

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

OSHPD has determined that the proposed regulatory action would not impose a mandate on local agencies or school districts.

OBJECTIONS OR RECOMMENDATIONS MADE REGARDING THE PROPOSED REGULATION(S).

THE FOLLOWING ARE COMMENTS RECEIVED DURING THE 45-DAY PUBLIC COMMENT PERIOD – From OCTOBER 5, 2009 to NOVEMBER 16, 2009 for OSHPD 07/09:

Comment # 1 - Section 1707A.6

Commenter: Mark Gilligan, *Individual*.

Mr. Gilligan proposed repeal of existing amendments in Section 1707A.6 by keeping model code Exceptions 1 & 2 to Section 1707A.6.

Reason: By requiring special inspection of all veneer it means that the application of wood siding will require special inspection and the associated additional expenses. This does not seem to be justified by experience. The constant presence of the IOR should address the worse abuses and provide a cost effective way to address the concern.

Note that deleting exemption 1 will require special inspection for the application of stucco/plaster on one and two story buildings. Where stucco veneer has delaminated in an earthquake it is typically associated with high drift ratios which if they were to occur would indicate greater problems with the building.

OSHPD Response: This public comment does not address OSHPD's proposed retention of the existing amendments. The text was shown in the express terms to show modifications made in the model code. The requirements, rights, responsibilities, conditions, or prescriptions contained in the existing OSHPD amendment are not materially altered. At this time, OSHPD can not propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in August, 2009. OSHPD will take this comment under consideration during a subsequent rulemaking cycle.

Commenter didn't cite potential violation of any of the 9-point criteria of Health and Safety Code § 18930.

Comment # 2 - Section 1911.1.1 and multiple other locations in the CBC.

Commenter: Mark Gilligan, *Individual*.

Mr. Gilligan proposed deletion of reference to ICC-ES acceptance criteria and ICC-ES evaluation reports in all locations.

Reason: This well intentioned code change should be rejected because they create numerous legal difficulties.

ICC-ES Acceptance Criteria are not acceptable standards. ICC-ES AC's are developed in a closed process with limited public comment and are not developed using a consensus process. As a result ICC-ES does not consider them as acceptable reference standards for inclusion in the IBC. ICC-ES ACs would also not meet the criteria for ANSI or ASTM standards because of the process. Thus it is suggested that ICC-ES's should be considered unacceptable for inclusion in the CBC.

ICC-ES AC's require that follow up inspections of manufacturers be performed by an organization accredited by IAS. IAS is a sister company to ICC-ES. Thus this creates a situation where the only way to comply with the code is to retain a client of IAS thus creating a monopoly. There is also the appearance of a conflict of interest.

ICC-ES AC's were written to be used by ICC-ES exclusively and contain provisions that would give ICC-ES the authority to unilaterally accept variations. For example Section 14.2.1 in Annex A of ICC-ES-AC 308 allows ICC-ES to approve alternate ways to satisfy the requirement for a Quality Assurance program. This effectively gives a private organization the right to accept deviations without governmental review.

ICC-ES has copyrighted their acceptance criteria and limits their use to the preparation of evaluation reports that are to be issued by ICC-ES. This in effect creates a monopoly for ICC-ES which is a private business.

The reference of ICC-ES ACs in the body of the CBC creates a potential copyright issue.

ICC-ES ESR's are proprietary reports and their being mentioned in the body of the code would effectively establish ICC-ES as a monopoly. Note that there are competitors to ICC-ES and these proposed regulations will likely have significant impact on them.

Adopting these proposed regulations where ICC-ES ESR's are specifically mentioned, effectively delegates to a private business the right to effectively modify the building regulations without proper governmental review. Acceptance criteria and evaluation reports can be modified without review by the building official, thus the allowable loads can be changed without governmental review. With the proposed code changes the agency would be required to accept the modified allowable values in the ESR's and would not be able to prevent their use by the engineer of record.

ICC-ES is paid by manufacturers to produce acceptance criteria and evaluation reports with much of the content being generated by the manufacturer of the products being addressed. In this situation even the most well intentioned individuals has the potential of developing biases because of their need to meet the needs of their client and to stay within budget. This is why there is a need for an independent third party review. This independent review will be subverted by the proposed regulations.

Evaluation reports are generated to assist the building official to deal with alternate means of code compliance and are not proof that the proprietary products comply with the intent of the code. In addition the technical data used to support the conclusions of the evaluation reports are considered proprietary information and are not available for review by third parties.

Instead of referencing ICC-ES ACs and ESRs alternates are:

- Treat these products as alternate means of compliance and perform reviews of the submitted products similar to provisions in Section 104.11 of the IBC. Require public disclosure of performance data used to justify the alternates. This is similar to current practice but should be considered short term solution.
- DSA and OSHPD to propagate standards and develop specific code language. This is not preferred because DSA and OSHPD will likely not have special expertise to develop standards and because when standards are ultimately developed there will be a tendency to retain idiosyncratic code provisions thus creating difficulties.
- Work with product manufacturers and standards propagating bodies to support the development of standards. Create disincentives for products for which there are no reference standards. Consider the imposition of an additional plan checking fee for all products proposed as alternate means of code compliance to be used to pay for the additional costs associated with reviewing these products. This is the preferred long term fix.

OSHPD Response:

Regarding Section 2209A.3: This public comment does not address OSHPD's proposed nonsubstantial clarifying editorial modifications to the existing amendment. The amendment does not modify the existing reference to ICC-ES AC-43, which is permitted as an acceptable alternate to show conformance with code requirements for steel deck diaphragms. The change does not materially alter the requirements, rights, responsibilities, conditions, or prescriptions contained in the original text. At this time, OSHPD cannot propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in August, 2009. OSHPD will take this comment under consideration during a subsequent rulemaking cycle.

Regarding other sections: References to ICC-ES Acceptance Criteria and Evaluation Reports complement, but do not replace, existing code requirements. They are provided to identify options for code user that save time and effort, by identifying alternatives acceptable to OSHPD without going through the lengthy testing and analysis and/or the Alternative Means of Compliance Process. The ICC documents that are directly referenced have been reviewed by

OSHPD for conformance with the code requirements, are acceptable alternatives to OSHPD, and are widely accepted in the design, construction, and enforcement community. In the amendments, the ICC documents are identified as an acceptable alternative, and do not replace any existing code language. For example, 2009 IBC Section 1912 Anchorage to Concrete – Strength Design specifies that expansion and undercut anchors be designed in Accordance with Appendix D of ACI 318. Other post-installed fastener types “...shall be in accordance with an approved procedure”. Appendix D of ACI 318 requires extensive testing of post-installed anchors. These requirements are retained. Without the reference to the ICC-ES documents, OSHPD would have to evaluate the applicable test data for every use of post-installed anchors, a laborious and time-consuming task, or accept third-party evaluations of the items. The public interest in efficient and timely review is enhanced by the proposed amendments that reference the ICC-ES documents, since they reduce ambiguity by identifying acceptable alternatives. The existing code requirements are retained and the ability to use of other approval alternatives, should they become available, is maintained.

Commenter didn't cite potential violation of any of the 9-point criteria of Health and Safety Code § 18930.

Comment # 3 - Section 1905A.2.

Commenter: Mark Gilligan, *Individual*.

Mr. Gilligan proposed repeal of existing amendments in Section 1905A.2 that require registered civil engineer to select the concrete mix design.

Reason: This provision imposes a requirement and cost that is not justified by the need to protect the public and in fact does nothing to protect the public.

Given that the strength of concrete mixes is based on trial batches or historical results and is confirmed by tests of installed concrete there is no reason why a registered civil engineer needs to design the mix proportions. In practice mix designs are regularly prepared by concrete supplier technicians who are not registered without supervision by a registered engineer. The lack of problems with non-DSA and non-OSHPD projects indicates that this approach works.

Other mix requirements are specified by the EOR and no engineering judgment is needed by the concrete supplier. Thus this requirement adds cost for no benefit.

OSHPD Response: This public comment does not address OSHPD's proposed nonsubstantial clarifying editorial modifications to the existing amendment. The modification deletes a duplicative requirement in the existing amendment that testing to verify concrete proportions of the mix design be performed in a lab acceptable to the enforcement agency. The change does not materially alter the requirements, rights, responsibilities, conditions, or prescriptions contained in the original text. At this time, OSHPD cannot propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in August, 2009. OSHPD will take this comment under consideration during a subsequent rulemaking cycle.

Commenter didn't cite potential violation of any of the 9-point criteria of Health and Safety Code § 18930.

Comment # 4 - Section 1916A.2.

Commenter: Mark Gilligan, *Individual*.

Mr. Gilligan proposed repeal of existing amendments in Section 1916A.2 that require testing of reinforcing bars.

Reason: The cost of the tests of reinforcing bars is unreasonable. Experience by testing laboratories has shown that failures of the bars essentially do not occur. Thus requiring tests of reinforcing bars is a waste since there is not a problem that is solved by the test. In fact the only good the tests do is document that there is not a problem and that the testing is not necessary. If there were more failures then the testing would have some value since they could be used to take corrective action.

The requirement for testing reinforcing bars is arbitrary and inconsistent since comparable testing is not required for rolled steel beams. In both cases the steel is produced using similar levels of quality control the primary difference is the shape it is rolled into.

Allowing the use of reinforcing steel that does not have a certified mill test report reduces our assurance that the steel will meet the requirements. Testing is limited in the ability to identify defects and thus to rely on testing alone is to accept greater ambiguity. Reinforcing steel that can be linked to a certified mill certificate provides more assurance that the material came from the same source and that it was manufactured under controlled conditions.

Note that the mill report includes the results of a strength test.

The absence of mill certification since it is questionable as to the effectiveness of testing since it is hard to verify if all of the bars came from the same source.

The practice of DSA plan checkers requiring that the construction documents allow the use of reinforcing bars without certified mill reports, even when the structural engineer wishes to require all steel have a mill report, results in a situation where this regulation in conjunction with DSA policy forces the structural engineer to reduce the specified level of quality. Thus this provision actually has had the effect of reducing the specified level of quality.

Further the provisions for a waiver of material testing historically has not been an option since DSA staff have consistently withheld their approval even when so recommended by the structural engineer.

OSHPD Response: This public comment does not address OSHPD's proposed nonsubstantial clarifying editorial modifications to the existing amendment. The amendment consolidates existing amendments in Section 1916A.4 into Section 1916A.2, allowing the design engineer to waive rebar testing when certified mill test reports are provided. The change does not materially alter the requirements, rights, responsibilities, conditions, or prescriptions contained in the original text. At this time, OSHPD cannot propose substantive modifications to the existing amendment as requested, as Government Code §11346.45 requires the proposing state agency to include all parties affected by a proposed code change during the code change development process, which concluded in August, 2009. OSHPD will take this comment under consideration during a subsequent rulemaking cycle.

Commenter didn't cite potential violation of any of the 9-point criteria of Health and Safety Code § 18930.

DETERMINATION OF ALTERNATIVES CONSIDERED AND EFFECT ON PRIVATE PERSONS

OSHPD has determined that no alternative considered would be more effective in carrying out the purpose for which the regulation is proposed or would be as effective and less burdensome to affected private persons than the adopted regulation.

REJECTED PROPOSED ALTERNATIVE THAT WOULD LESSEN THE ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES:

No alternatives were proposed. OSHPD has determined that the proposed regulations will not have an adverse economic impact on small businesses.