RECOMMENDED ACTION AND JUSTIFICATION:

Waive First Reading and Introduce Ordinance

Waive Second Reading and adopt ordinance amending Chapter 15.10 entitled Adoption of Uniform Codes of the Mariposa County Code as adopted by the Building Standards Commission and Published in Building Standards Bulletin 01-03 on August 1, 2003, the 2004 Edition of the California Electrical Code, the 2004 Edition of the American Society of Mechanical Engineers Standard A 17.1 Safety Code for Elevators and Escalators. The adoption of more restrictive building codes will help to mitigate natural disaster affects and to ensure the safety of all structures within Mariposa County.

BACKGROUND AND HISTORY OF BOARD ACTIONS:

The Insurance Services Office (ISO) has met with the County in regard to current building code requirements. During the past review and based upon the building standards at that time, the county was given a rating of four (4). During the recent ISO evaluation, in order to keep the present rating, the County must adopt the referenced codes or obtain a rating of nine (9).

ALTERNATIVES AND CONSEQUENCES OF NEGATIVE ACTION:

The ISO rating is one of the determining factors used by insurance companies to regulate insurance coverage premiums on structures in Mariposa County. An unfavorable high number would indicate an increase in premiums within the county.

Financial Impact? ( ) Yes ( ) No Current FY Cost: $ Annual Recurring Cost: $
Budgeted In Current FY? ( ) Yes ( ) No ( ) Partially Funded
Amount in Budget: $ Additional Funding Needed: $
Source:
Internal Transfer
Unanticipated Revenue
Transfer Between Funds
Contingency
( ) General ( ) Other

List Attachments, number pages consecutively
Proposed Ordinance 1-3
Building Standards Bulletin 4-32

CLERK’S USE ONLY:
Res. No.: 1029 Ord. No. 1029
Vote – Ayes: _____ Noes: _____
Absent: _____
( ) Approved
( ) Minute Order Attached ( ) No Action Necessary

The foregoing instrument is a correct copy of the original on file in this office.
Date: ________________
Attest: MARGIE WILLIAMS, Clerk of the Board
County of Mariposa, State of California
By: ____________________
Deputy

COUNTY ADMINISTRATIVE OFFICER:
( ) Requested Action Recommended
( ) No Opinion
Comments:

CAO: W

Revised Dec. 2002
TO: JOHN DAVIS, Building Director

FROM: MARGIE WILLIAMS, Clerk of the Board

SUBJECT: Waive First Reading and Introduce Ordinance Amending Chapter 15.10 Entitled Adoption of Uniform Codes as Adopted by the Building Standards Commission and Published in Building Standards Bulletin 01-03 on August 1, 2003, the 2004 Edition of the California Electrical Code, the 2004 Edition of the American Society of Mechanical Engineers Standard A 17.1 Safety Code for Elevators and Escalators.

THE BOARD OF SUPERVISORS OF MARIPOSA COUNTY, CALIFORNIA

ADOPTED THIS Order on May 16, 2006

ACTION AND VOTE:

John E. Davis, Building Director;
Waive First Reading and Introduce Ordinance Amending Chapter 15.10 Entitled Adoption of Uniform Codes as Adopted by the Building Standards Commission and Published in Building Standards Bulletin 01-03 on August 1, 2003, the 2004 Edition of the California Electrical Code, the 2004 Edition of the American Society of Mechanical Engineers Standard A 17.1 Safety Code for Elevators and Escalators.

BOARD ACTION: Discussion was held with John Davis. Chairman Stetson called for input from the public and none was received. (M)Fritz, (S)Turpin, the first reading was waived and an Ordinance introduced amending Chapter 15.10, entitled Adoption of Uniform Codes, as recommended. The Clerk of the Board read the title of the Ordinance into the record. Ayes: Unanimous.

Cc: Tom Guarino, County Counsel
File
MARIPosa COUNTY ORDINANCE NO. 1029

AN ORDINANCE AMENDING SECTION 15.10.010 OF THE MARIPosa COUNTY CODE, ENTITLED ADOPTION OF UNIFORM CODES

WHEREAS, the Board of Supervisors desire to amend Section 15.10.010 of the Mariposa County Code, and

WHEREAS, this adoption will protect the health, safety and welfare of the citizens of Mariposa County, the standards of building within the County must conform with state law except where local conditions warrant more restrictive regulations, and, therefore, the Board of Supervisors should adopt the current state building codes contained in California Building Standards Title 24, and other uniform codes governing the construction and regulation of buildings and structures.

WHEREAS, pursuant to California Health and Safety Code Section 17958.7, Mariposa County makes the factual findings set forth in “Exhibit A” attached hereto and incorporated herein by reference, and finds that the amendments made in this ordinance to the California Building Standards Title 24, Part 2, 2001 California Building Code, incorporating the Uniform Building Code, 1997 Edition, are reasonably necessary because of the local climatic, geological or topographical conditions stated therein.

NOW, THEREFORE, THE BOARDS OF SUPERVISORS OF MARIPosa COUNTY, a political subdivision of the State of California, does ordain as follows:
SECTION I: Section 15.10.010 of Chapter 15.10 of the Mariposa County Code is hereby amended to add as follows:

E. Emergency Regulations to Update Structural Building Standards. The adoption of these building standards/codes is necessary for the immediate preservation of the public peace, health and safety or general welfare within the county as follows: The California Building Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.

F. California Mechanical Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.

G. California Plumbing Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.

H. California Electrical Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.
I. Uniform Housing Code, latest adopted edition as amended from time to time as adopted by the International Conference of Building Officials.

J. Uniform Administrative Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.

K. Uniform Code for the Abatement of Dangerous Buildings, latest adopted edition as amended from time to time as adopted by the International Conference of Building Officials.

L. Uniform Solar Energy Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.

M. Uniform Sign Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials, excepting therefrom the following Sections of the Uniform Sign Code which are being deleted or revised to remain consistent with the Mariposa County Zoning Ordinance and all applicable Specific Plans as follows:

SECTION 402 CONSTRUCTION

402.7 Display Surfaces. Display surfaces of signs may be made of metal or glass.

Glass thickness and area limitations shall be as set forth in Table 4-A.

SECTION 703 – PROJECTION

Ground signs shall not project over public property.

SECTION 803 – PROJECTION AND CLEARANCE

803.1 Projection. Roof signs may project beyond a legal setback line complying with the requirements specified in Title 17 of the Mariposa County Code and any applicable area plans.

SECTION 1401 – GENERAL

Temporary signs shall not exceed 100 square feet (9.29 m²) in area. Temporary signs of rigid material shall not exceed 24 square feet (2.23 m²) in area, or 6 feet (1829 mm) in height, nor shall any such sign be fastened to the ground.

Temporary signs may remain in place for a period not exceeding 20 days.
N. Uniform Swimming Pool, Spa and Hot Tub Code latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.

O. Uniform Building Security Code, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.

P. Safety Code for Elevators, latest adopted edition as amended from time to time, as adopted by the International Conference of Building Officials.


CC. Section 109, Certificate of Occupancy. The County shall issue an occupancy certificate for all new Group R Division 3 and U-1 occupancies.


SECTION II: Effective Date. This ordinance shall become effective thirty (30) days after the final passage pursuant to Government Code 25123.

PASSED AND ADOPTED by the Board of Supervisors of Mariposa County this 23rd day of May, 2006 by the following vote:

AYES: STETSON, TURPIN, BIBBY, FRITZ, PICKARD
NOES: NONE
ABSENT: NONE
Abstained: NONE

LEE STETSON, Chairman
Mariposa County Board of Supervisors

ATTEST:

MARGIE WILLIAMS
Clerk of the Board

APPROVED AS TO FORM:

THOMAS P. GUARINO
County Counsel
FINDING OF EMERGENCY
OF THE
CALIFORNIA BUILDING STANDARDS COMMISSION
REGARDING THE CALIFORNIA BUILDING CODE
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2

The adoption of these regulations or order of repeal is necessary for the immediate preservation of the public peace, health and safety, or general welfare, as follows:

Due to recent nationalizing of model building codes by the National Fire Protection Association (NFPA) and the International Code Council (ICC), California is required to choose a different model building code upon which to base its state building code. The current model code, published by the International Conference of Building Officials (ICBO) that is used as a basis for the California Building Code is the 1997 Uniform Building Code. The new model codes being considered are the NFPA 5000 Building Code, as published by NFPA, and the 2003 International Building Code as published by the ICC. Given the need to thoroughly review, develop a factual justification for choosing a particular model building code, and ensure that the chosen model building code is in the best interest of the citizens of California, the time taken to review, choose and adopt a brand new model building code will substantially exceed the time normally taken to adopt a model building code. The extended review and adoption time has caused the current California Building Code to be out of step in its reference standards and engineering principles with the more current model building codes.

The California Building Standards Commission is proposing to adopt those building standards that are viewed to be the most critically needed updates to ensure public safety in the buildings it has the authority to regulate. These standards will also serve as a template for local municipalities to adopt as local modifications, thus providing for a uniform level of public safety. The California Building Standards Commission finds that:

1. Recent major earthquakes have proven that there are shortcomings in the current standards;
2. The current published standards don't include major advancements in the field of seismic design;
3. Approval of the proposed standards will provide for higher public safety in the event of a large earthquake; and
4. The proposed standards will significantly reduce loss of life and economic hardship after a major quake.

AUTHORITY AND REFERENCE

The California Building Standards Commission proposes to adopt these building standards under the authority granted by Health and Safety Code Section 18934.5. The purpose of these building standards is to implement, interpret, and make specific the provisions of Health and Safety Code Section 18934.5.
INFORMATIVE DIGEST

Summary of Existing Laws
California Building Standards Law (Health and Safety Code Section 18900 – 18949.6) establishes the California Building Standards Commission to oversee the adoption and publications of building standards for state regulated occupancies in California. Further, existing law requires any state agency that proposes and/or adopts a building standard to submit the building standard to the Commission for approval and publication in the California Building Standards Code. Specifically pertaining to this regulatory action, Health and Safety Code section 18934.5, authorizes the Commission to adopt building standards providing the minimum standards for the design and construction of state-owned buildings, buildings constructed by the Regents of the University of California to the extent permitted by law, and buildings constructed by the Chancellors of the State University, where no other state agency has the authority.

Summary of Existing Regulations
Existing regulations pertaining to this regulatory action are contained in the 2001 California Building Code (California Code of Regulations, Title 24, Part 2), which is based upon the 1997 Uniform Building Code of the International Conference of Building Officials. The regulations being modified by this action are contained in Chapters 16, 17, 19, 22, and 23. Chapter 16 contains the structural design requirements; Chapter 17 contains structural testing and inspection requirements; Chapter 19 contains the concrete standards; Chapter 22 contains the steel construction standards; and Chapter 23 contains the wood construction standards.

Summary of Effect
This regulatory action makes some of the more critically needed updates to California standards. These updates are currently accepted, nationally recognized standards and engineering principles, which have been determined to be lacking in the California Building Code.

Comparable Federal Statute or Regulations
NEHRP – National Earthquake Hazard Reduction Program standards

Small Business Affect
This regulatory action may or may not have an affect on small businesses, as the standards contained in building codes offer designers and owners optional construction techniques and materials. Also the size and design of a building has a bearing upon the affect, which is controlled by the designer and owner.

MATTERS PRESCRIBED BY STATUTE APPLICABLE TO THE AGENCY OR TO ANY SPECIFIC REGULATION OR CLASS OF REGULATIONS

There are no other matters prescribed by statute applicable to this proposed action.
MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

The California Building Standards Commission has determined that the proposed regulatory action would not impose a mandate on local agencies or school districts.

This enactment of standards is no different than adoption of a new cycle of codes. These standards are not different from what most states enforce in the United States. This is an improvement in standards that will provide greater structural safety in active seismic regions. These will apply only to state-owned buildings, buildings constructed by the Regents of the University of California to the extent permitted by law, and buildings constructed by the Chancellors of the State University.

FISCAL IMPACT STATEMENT (attached Form 399)

A. Cost or Savings to any state agency: YES
B. Cost to any local agency required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4: NO
C. Cost to any school district required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4: NO
D. Other nondiscretionary cost or savings imposed on local agencies: NO
E. Cost or savings in federal funding to the state: NO

Estimate: The cost or savings of this regulatory action cannot be determined, as the application of the building code standards provides designers and owners with options when designing and constructing buildings. The proposed standards are intended to promote public safety and reduce structural damages caused from lateral forces, thus reducing costs of repairs and temporary relocation of services.

A. There is a potential cost savings to the Office of Emergency Services due to reduction in structural damage of large and tall buildings.

B. Savings to FEMA for less damage to structures and consequent savings in funds and resources.
EXPRESS TERMS
OF
PROPOSED BUILDING STANDARDS
OF THE
CALIFORNIA BUILDING STANDARDS COMMISSION

REGARDING THE CALIFORNIA BUILDING CODE,
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2

(The State agency shall draft the regulations in plain, straightforward language, avoiding technical terms as much as possible and using a coherent and easily readable style. The agency shall draft the regulation in plain English. A notation shall follow the express terms of each regulation listing the specific statutes authorizing the adoption and listing specific statutes being implemented, interpreted, or made specific. (PART 1 – ADMINISTRATIVE CODE)

LEGEND FOR EXPRESS TERMS

1. Existing California amendments or code language being modified: 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.

EXPRESS TERMS

CHAPTER 2 – DEFINITIONS

SECTION 213

Light-Frame Construction is a type of construction whose vertical and horizontal structural elements are primarily framed by a system of repetitive wood or light gauge steel framing members, and which does not use structural concrete as floor or roof diaphragms.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

SECTION 1612 – COMBINATION LOADS

1612.3 Load Combinations Using Allowable Stress Design
1612.3.1 Basic load combinations. ...
1612.3.2 Alternate load combinations. ...

1612.3.2.1 [For BSC] Alternate basic load combinations. In lieu of the basic load combinations specified in Section 1612.3.1, structures and portions thereof shall be permitted to be designed for the most critical effects...
resulting from the following load combinations. When using these alternate basic load combinations, a one-third increase shall be permitted in allowable stresses for all combinations including W or E but not concurrent with the duration of load increase permitted in Division III of Chapter 23.

\[
\begin{align*}
D + L + (L, \text{ or } S) & \quad (12-12) \\
D + L + (W \text{ or } E/1.4) & \quad (12-13) \\
D + L + W + S/2 & \quad (12-14) \\
D + L + S + W/2 & \quad (12-15) \\
D + L + S + E/1.4 & \quad (12-16) \\
0.9D + E/1.4 & \quad (12-16-1)
\end{align*}
\]

**EXCEPTIONS:**
1. Crane hook loads need not be combined with roof live load or with more than three fourths of the snow load or one half of the wind load.
2. Design snow loads of 30 psf (1.44 kN/m²) or less need not be combined with seismic loads. Where design snow loads exceed 30 psf (1.44 kN/m²), the design snow load shall be included with seismic loads, but may be reduced up to 75 percent where consideration of siting, configuration and load duration warrant when approved by the building official.

**Notation**
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

**Section: 1629.4.2. Seismic Zone 4 near-source factor.**

**Section: 1629.4.2.1 [For BSC] Seismic Zone 4 near-source factor.** In Seismic Zone 4, each site shall be assigned a near-source factor in accordance with Table 16-S and the Seismic Source Type set forth in Table 16-U. The value of \( N_s \) used in determining \( C_s \) need not exceed 1.1 for structures complying with all the following conditions:

1. The soil profile type is \( S_A, S_B, S_C, \) or \( S_D \).
2. \( p = 1.0 \).
3. Except in single-story structures, Group R, Division 3 and Group U, Division 1 Occupancies, moment frame systems designated as part of the lateral-force-resisting system shall be special moment-resisting frames.
4. The provisions in Sections 9.6a and 9.6b of AISC – Seismic Part 1 shall not apply, except for columns in one-story buildings or columns at the top story of multistory buildings.
5. None of the following structural irregularities is present: Type 1, 4 or 5 of Table 16-L, and Type 1 or 4 of Table 16-M.

**Notation**
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]
1630.2.3.4 [For BSC] Horizontal Distribution. Diaphragms constructed of untapped steel decking or wood structural panels or similar light-frame construction are permitted to be considered as flexible.

1630.2.3.5 Applicability. Sections 1630.1.2, 1630.1.3, 1630.2.1, 1630.2.2, 1630.5, 1630.9, 1630.10 and 1631 shall not apply when using the simplified procedure.

**EXCEPTION:** For buildings with relatively flexible structural systems, the building official may require consideration of PΔ effects and drift in accordance with Sections 1630.1.3, 1630.9 and 1630.10. Δs shall be prepared using design seismic forces from Section 1630.2.3.2.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1630.4.2 Vertical combinations. ...

1630.4.2.1 [For BSC] Vertical combinations. The value of R used in the design of any story shall be less than or equal to the value of R used in the given direction for the story above.

**EXCEPTION:** This requirement need not be applied to a story where the dead weight above that story is less than 10 percent of the total dead weight of the structure.

Structures may be designed using the procedures of this section under the following conditions:
1. The entire structure is designed using the lowest R of the lateral-force-resisting systems used, or
2. The following two-stage static analysis procedures may be used for structures conforming to Section 1629.8.3, Item 4.
   2.1 The flexible upper portion shall be designed as a separate structure, supported laterally by the rigid lower portion, using the appropriate values of R and p.
   2.2 The rigid lower portion shall be designed as a separate structure using the appropriate values of R and p. The reactions from the upper portion shall be those determined from the analysis of the upper portion multiplied by the ratio of the (R/p) of the upper portion over (R/p) of the lower portion. This ratio shall not be taken less than 1.0.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1630.8.2 Elements supporting discontinuous systems.
1630.8.2.1 General. ... 

1630.8.2.1.1 [For BSC] General Where any portion of the lateral-load-resisting system is discontinuous, such as for vertical irregularity Type 4 in Table 16-L or plan irregularity Type 4 in Table 16-M, concrete, masonry, steel and wood elements (i.e., columns, beams, trusses or slabs) supporting such discontinuous systems shall have the design strength to resist the combination loads resulting from the special seismic load combinations of Section 1612.4. The Connections of such discontinued elements to the supporting members shall be adequate to transmit the forces for which the discontinuous elements were required to be designed.

**EXCEPTIONS:** 1. The quantity $E_0$ in Section 1612.4 need not exceed the maximum force that can be transferred to the element by the lateral-force-resisting system.
2. Concrete slabs supporting light-frame wood shear wall systems or light-frame steel and wood structural panel shear wall systems.

For Allowable Stress Design, the design strength may be determined using an allowable stress increase of 1.7 and a resistance factor, $\phi$, of 1.0. This increase shall not be combined with the one-third stress increase permitted by Section 1612.3, but may be combined with the duration of load increase permitted in Chapter 23, Division III.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1630.8.2.2 Detailing requirements in Seismic Zones 3 and 4. ... 

1630.8.2.2.1 [For BSC] Detailing requirements in Seismic Zones 3 and 4. In Seismic Zones 3 and 4, elements supporting discontinuous systems shall meet the following detailing or member limitations:

1. Reinforced concrete or reinforced masonry elements designed primarily as axial-load members shall comply with Section 1921.4.4.5.
2. Reinforced concrete elements designed primarily as flexural members and supporting other than light-frame wood, shear wall systems or light-frame steel and wood structural panel shear wall systems shall comply with Sections 1921.3.2 and 1921.3.3. Strength computations for portions of slabs designed as supporting elements shall include only those portions of the slab that comply with the requirements of these Sections.
3. Masonry elements designed primarily as axial-load carrying members shall comply with Sections 2106.1.12.4, Item 1, and 2108.2.6.2.5.
4. Masonry elements designed primarily as flexural members shall comply with Section 2108.2.6.2.5.
5. Steel elements designed primarily as flexural members or trusses shall have bracing for both top and bottom beam flanges or chords at the location of the support of the discontinuous system and shall comply with the requirements of AISC-Seismic Part I, Section 9.4b.
6. Wood elements designed primarily as flexural members shall be provided with lateral bracing or solid blocking at each end of the element and at the connection location(s) of the discontinuous systems.
### CHAPTER 16 – STRUCTURAL DESIGN REQUIREMENTS

#### TABLE 16.1-N  
[For BSC] STRUCTURAL SYSTEMS

<table>
<thead>
<tr>
<th>BASIC STRUCTURAL SYSTEM</th>
<th>LATERAL-FORCE-RESISTING SYSTEM DESCRIPTION</th>
<th>R</th>
<th>( \frac{1}{T} )</th>
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<tbody>
<tr>
<td><strong>1. Bearing wall system</strong></td>
<td>1. Light-framed walls with shear panels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Wood structural panel walls for structures three stories or less</td>
<td>5.5</td>
<td>2.8 65</td>
</tr>
<tr>
<td></td>
<td>b. All other light-framed walls</td>
<td>4.5</td>
<td>2.8 65</td>
</tr>
<tr>
<td></td>
<td>2. Shear walls</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Concrete</td>
<td>4.5</td>
<td>2.8 160</td>
</tr>
<tr>
<td></td>
<td>b. Masonry</td>
<td>4.5</td>
<td>2.8 160</td>
</tr>
<tr>
<td></td>
<td>3. Light steel-framed bearing walls with tension-only bracing</td>
<td>2.8</td>
<td>2.2 65</td>
</tr>
<tr>
<td></td>
<td>4. Braced frames where bracing carries gravity load</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Steel</td>
<td>4.4</td>
<td>2.2 160</td>
</tr>
<tr>
<td></td>
<td>b. Concrete</td>
<td>2.8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>c. Heavy timber</td>
<td>2.8</td>
<td>2.2 65</td>
</tr>
<tr>
<td><strong>2. Building frame system</strong></td>
<td>1. Steel eccentrically braced frame (EBF)</td>
<td>7.0</td>
<td>2.8 240</td>
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<tr>
<td></td>
<td>2. Light-framed walls with shear panels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Wood structural panel walls for structures three stories or less</td>
<td>6.5</td>
<td>2.8 65</td>
</tr>
<tr>
<td></td>
<td>b. All other light-framed walls</td>
<td>5.0</td>
<td>2.8 65</td>
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<tr>
<td></td>
<td>3. Shear walls</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Concrete</td>
<td>5.5</td>
<td>2.8 240</td>
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<tr>
<td></td>
<td>b. Masonry</td>
<td>5.5</td>
<td>2.8 160</td>
</tr>
<tr>
<td></td>
<td>4. Ordinary braced frames</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Steel</td>
<td>5.5</td>
<td>2.2 35 ( \times ) 460</td>
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<tr>
<td></td>
<td>b. Concrete</td>
<td>5.6</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>c. Heavy timber</td>
<td>5.6</td>
<td>2.2 65</td>
</tr>
<tr>
<td></td>
<td>5. Special concentrically braced frames</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>a. Steel</td>
<td>6.4</td>
<td>2.2 240</td>
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<table>
<thead>
<tr>
<th>HEIGHT LIMIT FOR SEISMIC ZONES 3 AND 4 (feet)</th>
<th>( \times 304.8 ) for mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>
### 3. Moment-resisting frame system

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Value A</th>
<th>Value B</th>
<th>Value C</th>
</tr>
</thead>
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<tr>
<td>1. Special moment-resisting frame (SMRF)</td>
<td>Steel</td>
<td>8.5</td>
<td>2.8</td>
<td>N.L.</td>
</tr>
<tr>
<td>a. Steel</td>
<td>Concrete</td>
<td>8.5</td>
<td>2.8</td>
<td>N.L.</td>
</tr>
<tr>
<td>b. Concrete</td>
<td>Masonry moment-resisting wall frame (MMRF)</td>
<td>6.5</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>3. Concrete intermediate moment-resisting frame (IMRF)</td>
<td>Steel</td>
<td>4.5</td>
<td>2.8</td>
<td>35</td>
</tr>
<tr>
<td>a. Steel</td>
<td>Concrete</td>
<td>5.5</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>b. Concrete</td>
<td>Ordinary moment-resisting frame (OMRF)</td>
<td>3.5</td>
<td>2.8</td>
<td>460</td>
</tr>
<tr>
<td>a. Steel</td>
<td>Concrete</td>
<td>3.5</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>b. Concrete</td>
<td>Special truss moment frames of steel (STMFS)</td>
<td>6.5</td>
<td>2.8</td>
<td>240</td>
</tr>
</tbody>
</table>

### 4. Dual Systems

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Value A</th>
<th>Value B</th>
<th>Value C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shear walls</td>
<td>Concrete with SMRF</td>
<td>8.5</td>
<td>2.8</td>
<td>N.L.</td>
</tr>
<tr>
<td>a. Concrete with SMRF</td>
<td>Concrete with steel OMRF (Not Permitted)</td>
<td>6.5</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>b. Concrete with steel OMRF</td>
<td>Concrete with concrete IMRF</td>
<td>5.5</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>c. Concrete with concrete IMRF</td>
<td>Masonry with SMRF</td>
<td>4.2</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>d. Masonry with SMRF</td>
<td>Masonry with steel OMRF (Not Permitted)</td>
<td>4.2</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>e. Masonry with steel OMRF</td>
<td>Masonry with concrete IMRF</td>
<td>6.0</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>f. Masonry with concrete IMRF</td>
<td>Masonry with masonry MMRF</td>
<td>8.5</td>
<td>2.8</td>
<td>N.L.</td>
</tr>
<tr>
<td>g. Masonry with masonry MMRF</td>
<td>Steel EBF</td>
<td>4.2</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>2. Steel EBF</td>
<td>With steel SMRF</td>
<td>6.5</td>
<td>2.8</td>
<td>N.L.</td>
</tr>
<tr>
<td>a. With steel SMRF</td>
<td>With steel OMRF (Not Permitted)</td>
<td>6.5</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>b. With steel OMRF</td>
<td>Ordinary braced frames (Not Permitted)</td>
<td>4.2</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>c. Ordinary braced frames</td>
<td>Steel with steel SMRF</td>
<td>4.2</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>d. Steel with steel SMRF</td>
<td>Steel with steel OMRF</td>
<td>4.2</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>e. Steel with steel OMRF</td>
<td>Steel with concrete SMRF</td>
<td>7.5</td>
<td>2.8</td>
<td>N.L.</td>
</tr>
<tr>
<td>f. Steel with concrete SMRF</td>
<td>Concrete with concrete IMRF</td>
<td>4.2</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>g. Concrete with concrete IMRF</td>
<td>Special concentrically braced frames</td>
<td>4.2</td>
<td>2.8</td>
<td>160</td>
</tr>
<tr>
<td>3. Special concentrically braced frames</td>
<td>Steel with steel SMRF</td>
<td>6.5</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>a. Steel with steel SMRF</td>
<td>Steel with steel OMRF (Not Permitted)</td>
<td>6.5</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>b. Steel with steel OMRF</td>
<td>Steel IMRF (Not permitted)</td>
<td>6.5</td>
<td>2.8</td>
<td></td>
</tr>
</tbody>
</table>

### 5. Cantilevered column building systems

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Value A</th>
<th>Value B</th>
<th>Value C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cantilevered column elements</td>
<td></td>
<td>2.2</td>
<td>2.0</td>
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</table>

### 6. Shear wall-frame interaction systems

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Value A</th>
<th>Value B</th>
<th>Value C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Concrete</td>
<td></td>
<td>5.5</td>
<td>2.8</td>
<td>160</td>
</tr>
</tbody>
</table>

### 7. Undefined systems

<table>
<thead>
<tr>
<th>Description</th>
<th>Location</th>
<th>Value A</th>
<th>Value B</th>
<th>Value C</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Section 1629.6.7 and 1629.9.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

N.L. = no limit

1. See Section 1630.4 for combination of structural systems.
2. Basic structural systems are defined in Section 1629.6.
4. Includes precast concrete conforming to Section 1921.2.7.
5. Prohibited in Seismic Zones 3 and 4, except as permitted in Section 1634.2.
6. Unless otherwise approved by the enforcement agency in Seismic Zone 4.
7. Steel IMRF are permitted for buildings 35 ft. or less in height and the dead load of the roof, walls or floors not exceeding 35 psf each, or for single-story buildings 50 ft. or less in height with dead load of the roof or walls not exceeding 15 psf each where the
moment joints of field connections are constructed of bolted end plates; or single-family dwellings using light frame construction with 

\[ R = 3.0 \text{ and } f_2 = 2.2. \]

12 Steel Ordinary Frames are permitted for buildings 35 ft or less in height with the dead load of the roof, walls or floors not exceeding 15 psf each, or single-story buildings 60 ft or less in height with the dead load of the roof or walls not exceeding 15 psf each and where the moment joints of field connections are constructed of bolted end plates.

13 Steel Ordinary Braced Frames are permitted for buildings 35 ft or less in height; or penthouse structures; or single-story buildings 60 ft or less in height with the dead load of the roof or walls not exceeding 15 psf, each.

1 Total height of the building including cantilevered columns.

Prohibited in Seismic Zones 2A, 2B, 3 and 4. See Section 1633.2.7.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 17 -- STRUCTURAL TESTS AND INSPECTIONS

Section 1701.5 ...

5.2.1 [For BSC] Lateral force resisting steel frames. During the welding of lateral force resisting steel frames, in addition to Item 5.1 requirements, nondestructive testing as required by Section 1703 of this code.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

SECTION 1702 -- STRUCTURAL OBSERVATION...

SECTION 1702.1 -- [For BSC] STRUCTURAL OBSERVATION

Structural observation shall be provided in Seismic Zone 3 or 4 when one of the following conditions exists:

1. The structure is defined in Table 16-K as Occupancy Category I, II or III.
2. The structure is required to comply with Section 403.
3. The structure is in Seismic Zone 4 and a lateral design is required for the entire structure.

EXCEPTION: One- and two-story wood framed Group R, Division 3, B, F, M and S Occupancies provided the adjacent grade is not steeper than 1 unit vertical in 10 units horizontal (10% sloped).

4. When so designated by the architect or engineer of record, or
5. When such observation is specifically required by the building official.

The owner shall employ the engineer or architect responsible for the structural design. or another engineer or architect designated by the engineer or architect responsible for the structural design to perform structural observation as defined in Section 220.

The owner or owner's representative shall coordinate and call a pre-construction meeting between the engineer or architect responsible for the structural design, structural observer, contractor, affected...
subcontractors and deputy inspectors. The structural observer shall preside over the meeting. The purpose of the meeting shall be to identify the major structural elements and connections that affect the vertical and lateral load systems of the structure and to review scheduling of the required observations. A record of the meeting shall be included in the first report submitted to the building official.

Observed deficiencies shall be reported in writing to the owner's representative, special inspector, contractor and the building official. Upon the form prescribed by the building official, the structural observer shall submit to the building official a written statement at each significant construction stage stating that the site visits have been made and identifying any reported deficiencies which, to the best of the structural observer's knowledge, have not been resolved. A final report by the structural observer which states that all observed deficiencies have been resolved is required before acceptance of the work by the building official.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

SECTION 1703 NONDESTRUCTIVE TESTING...

SECTION 1703.1 [For BSC] NONDESTRUCTIVE TESTING

In Seismic Zones 3 and 4, welded connections between the primary members of lateral force resisting frames, which are subject to net tensile forces shall be tested by nondestructive methods in accordance with AISC-Seismic Part I Section 16 for compliance with approved standards and job specifications. This testing shall be a part of the special inspection requirements of Section 1701.5. A program for this testing shall be established by the person responsible for structural design and as shown on plans and specifications.

As a minimum, this program shall include the following:

1. All complete penetration groove welds contained in joints and splices shall be tested 100 percent either by ultrasonic testing or by radiography.

EXCEPTIONS: 1. when approved, nondestructive testing rate for an individual welder or welding operator may be reduced to 50 percent, provided the reject rate is demonstrated to be 5 percent or less of the welds tested for the welder or welding operator. A sampling of at least 40 completed welds for a job shall be made for such reduction evaluation. Reject rate is defined as the number of welds containing rejectable defects divided by the number of welds completed. For evaluating reject rate of continuous welds over 3 feet (914 mm) in length where the effective throat thickness is 1 inch (25 mm) or less, each 12-inch increment (305 mm) or fraction thereof shall be considered as one weld. For evaluating the reject rate on continuous welds over 3 feet (914 mm) in length where the effective throat thickness is greater than 1 inch (25 mm), each 6 inches (152 mm) length of fraction thereof shall be considered one weld.

2. For complete penetration groove welds on material less than 5/16 inch (7.9 mm) thick, nondestructive testing is not required; for this welding, continuous inspection is required.

3. When approved by the building official and outlined in the project plans and specification, this nondestructive ultrasonic testing may be performed in the shop of an approved fabricator utilizing qualified test techniques in the employment of the fabricator.

2. Partial penetration groove welds when used in column splices shall be tested either by ultrasonic testing or radiography when required by the plans and specifications. For partial penetration groove welds when used in column splices, with an effective throat less than 3/4 inch (19.1 mm) thick, nondestructive testing is not required; for this welding, continuous special inspection is required.
3. Base metal thicker than 1/8 inches (38 mm), when subjected to through-thickness weld shrinkage strains, shall be ultrasonically inspected for discontinuities directly behind such welds after joint completion.

Any material discontinuities shall be accepted or rejected on the basis of the defect rating in accordance with the (larger reflector) criteria of approved national standards.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 19 - CONCRETE

SECTION 1915 - FOOTINGS
1915.0 Notations ...
1915.1 Scope ...
1915.2 Loads and reactions. ...
1915.2.2 ...

1915.2.2.1 [For BSC] Base area of footing or number and arrangement of piles shall be determined from the external forces and moments (transmitted by footing to soil or piles) and permissible soil pressure or permissible pile capacity selected through principles of soil mechanics. External forces and moments are those resulting from the load combinations of Section 1612.3.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

1928.1.2.3 Basic combinations. ...

1928.1.2.3.1 [For BSC] Basic combinations. When permitted by Section 1928.1, structures, components and foundations shall be designed so that their design strength exceeds the effects of the factored loads in the following combinations:

1. 1.4D
2. 1.2D + 1.6L + 0.5(L, or S or R)
3. 1.2D + 1.6(L, or S or R) + (0.5L or 0.8W)
4. 1.2D + 1.3W + 0.5L + 0.5(L, or S or R)
5. 1.2D + 1.0E + (0.5L or 0.2S)
6. 0.9D + (1.3W or 1.0E)

Exceptions: 1. The load factor on L in combinations 3, 4 and 5 shall equal 1.0 for garages, areas occupied and places of public assembly, and all areas where the live load is greater than 100 lb./ft.²
(pounds-force per square foot) (4.79 kPa).

2. Each relevant strength limit state shall be considered. The most unfavorable effect may occur when one or more of the contributing loads are not acting.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

SECTION 2204-DESIGN METHODS

Design shall be by one of the following methods.

2204.1 Load and Resistance Factor Design. ...

2204.1.1 [For BSC] Load and Resistance Factor Design. Steel design based on load and resistance factor design method shall resist the factored load combinations of section 1612.2 in accordance with the applicable requirements of section 2205.

2204.2 Allowable Stress Design. ...

2204.2.1 [For BSC] Allowable Stress Design. Steel design based on allowable stress design methods shall resist the factored load combinations of section 1612.3 in accordance with the applicable requirements of section 2205.

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]

CHAPTER 22B
STEEL

DIVISION I – DESIGN AND CONSTRUCTION PROVISIONS

See Chapter 22, STEEL, Division I for content of this division.

DIVISION II – DESIGN STANDARDS FOR LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS

See Chapter 22, STEEL, Division II for content of this division.

DIVISION III – DESIGN STANDARD FOR SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN

See Chapter 22, STEEL, Division III for content of this division.
Division IV — SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS

Based on Seismic Provisions for Structural Steel Buildings, of the American Institute of Steel Construction.

(Part I, dated April 15, 1997
and Supplement No. 2, dated November 10, 2000.)

2210B — ADOPTION
Except for the modifications as set forth in Sections 2211B and 2212B of this division and the requirements of the Building Code, the seismic design, fabrication, and erection of structural steel shall be in accordance with the Seismic Provisions for Structural Steel Buildings, April 15, 1997 published by the American Institute of Steel Construction, 1 East Wacker Drive, Suite 3100, Chicago, IL 60601, as if set out at length herein. The adoption of Seismic Provisions for Structural Steel Buildings in this Division, hereinafter referred to as AISC-Seismic, shall include Parts I (LRFD), and Supplement No. 2, dated November 10, 2000.

Where other codes, standards, or specifications are referred to in this specification, they are to be considered as only an indication of an acceptable method or material that can be used with the approval of the Building Official.

2211B — DESIGN METHODS
When the load combinations from Section 1612.2 for LRFD are used, structural steel buildings shall be designed in accordance with Chapter 22 Division II (AISC-LRFD) and Part I of AISC-Seismic as modified by this Division.

2212B - AMENDMENTS
The AISC-Seismic adopted by this Division apply to the seismic design of structural steel members except as modified by this Section.

The following terms that appear in AISC-Seismic shall be taken as indicated in the 1997 Uniform Building Code.

1. Part I, Sec. 1. of the AISC Seismic Provisions is revised as follows:

1. SCOPE
These provisions are intended for the design and construction of structural steel members.
and connections in the Seismic Force Resisting Systems in buildings for which the design forces resulting from earthquake motions have been determined on the basis of various levels of energy dissipation in the inelastic range of response. These provisions shall apply to buildings in Seismic Zone 2 with an importance factor I greater than one, in Seismic Zones 3 and 4 or when required by the Engineer of Record.

These provisions shall be applied in conjunction with Chapter 22, Division II, hereinafter referred to as the LRFD Specification. All members and connections in the Lateral Force Resisting System shall have a design strength as provided in the LRFD Specification to resist load combinations 12-1 through 12-6 (in Chapter 16) and shall meet the requirements in these provisions.

Part I includes a Glossary, which is specifically applicable to this Part, and Appendix S.

2. Part I, Sec. 4.1, of the AISC Seismic Provisions is deleted and replaced as follows:

4.1 Loads and Load Combinations

The loads and load combinations shall be those in Section 1612.2 except as modified throughout these provisions.

\( E_h \) is the horizontal component of earthquake load \( E \) required in Chapter 16. Where required in these provisions, an amplified horizontal earthquake load \( \Omega E_h \) shall be used in lieu of \( E_h \), as given in the load combinations below. The term \( \Omega \), is the system overstrength factor as defined in chapter 16. The additional load combinations using amplified horizontal earthquake load are:

\[
\begin{align*}
1.2D + 0.5L + 0.2S + \Omega E_h & \quad (4-1) \\
0.9D + \Omega E_h & \quad (4-2)
\end{align*}
\]

Exception: the load factor on \( L \) in load combination 4-1 shall be equal to 1.0 for garages, areas occupied as places of public assembly and all areas where the live load is greater than 100 psf.

Division V — Seismic Provisions for Structural Steel Buildings

For Use With Allowable Stress Design

Based on Seismic Provisions for Structural Steel Buildings, of the American Institute of Steel Construction.

(Part III, dated April 15, 1997

and Supplement No. 2, dated November 10, 2000.)

2213B — ADOPTION

Except for the modifications as set forth in Sections 2211B and 2212B of this division and the requirements of the Building Code, the seismic design, fabrication, and erection of structural steel shall be in accordance with the Seismic Provisions for Structural Steel Buildings, April 15, 1997 published by the American Institute of Steel Construction, 1 East Wacker Drive, Suite 3100, Chicago, IL 60601, as if set out at length herein. The adoption of Seismic Provisions for Structural Steel Buildings in this Division, hereinafter referred to as AISC-Seismic, shall include Parts III (ASD) and Supplement No. 2, dated November 10, 2000.
Where other codes, standards, or specifications are referred to in this specification, they are to be considered as only an indication of an acceptable method or material that can be used with the approval of the Building Official.

**2214B - DESIGN METHODS**
When the Allowable Stress Design (ASD) method is used for design of members, structural steel buildings shall be designed in accordance with Chapter 22 Division III (AISC-ASD) and Part III of AISC-Seismic as modified by this Division.

**2215B - AMENDMENTS**
The AISC-Seismic adopted by this Division apply to the seismic design of structural steel members except as modified by this Section.
The following terms that appear in AISC-Seismic shall be taken as indicated in the 1997 Uniform Building Code.

<table>
<thead>
<tr>
<th>AISC-Seismic</th>
<th>1997 Uniform Building Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seismic Force Resisting System</td>
<td>Lateral Force Resisting System</td>
</tr>
<tr>
<td>Design Earthquake</td>
<td>Design Basis Ground Motion</td>
</tr>
<tr>
<td>Load Combinations Eqs. (4-1) and (4-2)</td>
<td>Chapter 16 Eqs. (12-17) and (12-18) respectively</td>
</tr>
<tr>
<td>$\Omega$</td>
<td>$E_m$</td>
</tr>
</tbody>
</table>

1. **Part III, Sec. 1. of the AISC Seismic Provisions is revised as follows:**

1. **SCOPE**
These provisions are intended for the design and construction of structural steel members and connections in the Seismic Force Resisting Systems in buildings for which the design forces resulting from earthquake motions have been determined on the basis of various levels of energy dissipation in the inelastic range of response. These provisions shall apply to buildings in Seismic Zone 2 with an importance factor I greater than one, in Seismic Zones 3 and 4 or when required by the Engineer of Record.

These provisions shall be applied in conjunction with Chapter 22, Division III, hereinafter referred to as the ASD Specification. All members and connections in the Lateral Force Resisting System shall have a design strength as provided in the ASD Specification to resist load combinations 12-1 through 12-6 (in Chapter 16) and shall meet the requirements in these provisions.

Part I includes a Glossary, which is specifically applicable to this Part and Appendix S.

2. **Part III, Sec. 4.1. of the AISC Seismic Provisions is deleted and replaced as follows:**

2.1 **Loads and Load Combinations**
The loads and load combinations shall be those in Section 1612.2 except as modified
throughout these provisions.

$E_h$ is the horizontal component of earthquake load $E$ required in Chapter 16. Where required in these provisions, an amplified horizontal earthquake load $\Omega E_h$ shall be used in lieu of $E_h$ as given in the load combinations below. The term $\Omega_s$ is the system overstrength factor as defined in chapter 16. The additional load combinations using amplified horizontal earthquake load are:

$$1.2 D + 0.5 L + 0.2 S + \Omega_s E_h$$ \hspace{1cm} (4-1)

$$0.9 D + \Omega_s E_h$$ \hspace{1cm} (4-2)

Exception: the load factor on $L$ in load combination 4-1 shall be equal to 1.0 for garages, areas occupied as places of public assembly and all areas where the live load is greater than 100 psf.

DIVISION VI – Load and Resistance Factor Design Specification for Cold-formed Steel Structural Members

See Chapter 22, STEEL, Division VI for content of this division.

DIVISION VII – Specification for Design of Cold-formed Steel Structural Members

See Chapter 22, STEEL, Division VII for content of this division.

DIVISION VIII – Lateral Resistance for Steel Stud Wall Systems

See Chapter 22, STEEL, Division VIII for content of this division.

Division IX-Open Web Steel Joists

See Chapter 22, STEEL, Division IX for content of this division

Division X-Design Standard for Steel Storage Racks

See Chapter 22, STEEL, Division X for content of this division

Division XI-Design Standard for Structural Applications of Steel Cables for Buildings

See Chapter 22, STEEL, Division XI for content of this division
CHAPTER 23 – WOOD

SECTION 2315 – WOOD SHEAR WALLS AND DIAPHRAGMS

2315.5 Wood Shear Walls and Diaphragms in Seismic Zones 3 and 4...

2315.5.6 [For BSC] Hold-down connectors. Hold-down connector bolts into wood framing require steel plate washers in accordance with Table 23-II-L. Hold-downs shall be re-tightened just prior to covering the wall framing.

Table 23-II-L [For BSC] MINIMUM SIZE STEEL PLATE WASHERS USED WITH HOLDOWN CONNECTORS

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Plate Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>x 25.4 for mm</td>
<td>x 25.4 for mm</td>
</tr>
<tr>
<td>1/2 in</td>
<td>3/16” x 2” x 2”</td>
</tr>
<tr>
<td>5/8 in</td>
<td>1/4” x 2-1/2” x 2-1/2”</td>
</tr>
<tr>
<td>3/4 in</td>
<td>5/16” x 2-3/4” x 2-3/4”</td>
</tr>
<tr>
<td>7/8 in</td>
<td>5/16” x 3” x 3”</td>
</tr>
<tr>
<td>1 in</td>
<td>3/8” x 3-1/2” x 3-1/2”</td>
</tr>
</tbody>
</table>

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]
CHAPTER 23 - WOOD

Division III - DESIGN SPECIFICATIONS FOR ALLOWABLE STRESS DESIGN OF WOOD BUILDINGS

Part I - ALLOWABLE STRESS DESIGN OF WOOD


SECTION 2316 - DESIGN SPECIFICATIONS

2316.1 Adoption and Scope. The National Design Specification for Wood Construction, Revised 1994 1997 Edition (NDS), which is hereby adopted as a part of this code, shall apply to the design and ... 

2316.2 Amendments.

12. Sec. 3.2.3.2 Sec. 3.2.3.3. Add to end of paragraph as follows: Cantilevered portions of beams less than 4 inches (102 mm) in nominal thickness shall not be notched unless the reduced section properties and lumber defects are considered in the design. For effects of notch on shear strength, see Section 3.4.4.

13. Sec. 3.3.2. Add a last paragraph as follows: ...

14. Sec. 3.3.4. Add a section as follows:

2.4.4.5. When girders, beams or joists are notched at points of support on the compression side, they shall meet design requirements for the net section in bending and in shear. The actual shear stress at such points shall be calculated as follows:

\[ f_v = \frac{3V}{2b(d' - (d' - e)/d) - e} \]

WHERE:

\[ d = \text{total depth of beam}, \]

\[ d' = \text{actual depth of beam at notch}, \]

\[ e = \text{distance notch extends inside the inner edge of support}, \]

\[ V = \text{shear force}. \]

Where \( e \) exceeds \( d' \), the actual shear stress for the notched on the compression side shall be calculated as follows:
Fb = 3V divided by 2bd

26. Sec. 13.2.4—Delete and substitute as follows:

13.2.4 Test for design values. Tests to determine design values for metal plate connectors in lateral withdrawal, net section shear and net section tension shall be conducted in accordance with the test and evaluation procedures in ANSI/TPI 1-1995. Design values determined in accordance with these test procedures shall be multiplied by all applicable adjustment factors (see Table 7.3.1) to obtain allowable design values.

27. NDS Supplement Table 5A—Add combinations and design values as follows:

Delete Table of Design Values in Pounds Per Square Inch

Notation
Authority: [Health and Safety Code, Section 18928]
Reference(s): [Health and Safety Code, Sections 18928 & 18934.5]