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Office Use Item No. _____

PARTICIPATION COMMENTS FOR THE NOTICE DATED AUGUST 31, 2012
Written comments are to be sent to the above address.

WRITTEN COMMENT DEADLINE: OCTOBER 15, 2012

Date: 10/15/12

From: Matthew L. Mlakar

Name (Print or type)

Matthew L. Mlakar

(Signature)

-- Structural Engineers Association of California, Building Code Committee

Agency, jurisdiction, chapter, company, association, individual, etc.

3001 E Street
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Sacramento
City

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We do not agree with:

The Agency proposed modifications As Submitted on Section No. 1705A.1 by DSA and OSHPD

and request that this section or reference provision be recommended:

Approved Disapproved Held for Further Study Approved as Amended

Suggested Revisions to the Text of the Regulations:

We recommend that DSA and OSHPD amend the structural provisions of the CBC adopt the language in IBC code change proposal S140-12 along with the definition of "structural steel element" in S238-12 to correct this problem. Copies of S140-12 and S238-12 are attached.

Reason: [The reason should be concise if the request is for "Disapproval," "Further Study," or "Approve As Amend" and identify at least one of the 9-point criteria (following) of Health and Safety Code §18930.]

The code language proposed by DSA and OSHPD results in the elimination of required special inspections for steel elements that are not considered "structural steel". These steel elements include many essential members of the gravity and lateral force resisting systems. The provisions adopted by DSA and OSHPD to continue to use the table from the 2010 CBC do not solve this problem for steel materials and steel welding since the proposed terms still refers to "structural steel."

Unless this problem is corrected the agencies will not be able to require special inspections for steel elements not considered "structural steel". This change will thus result in a significant reduction in the level of special inspection

that occurs for buildings that these agencies have the authority to regulate. We believe that the proposed change is necessary so as not to trigger the criteria in H&S Code 18930(a)(7)(A) since we believe that reducing the extent of these special inspection is inconsistent with the goals of the agency adopting these regulations.

The problem results from changes made to the 2012 IBC which removed steel special inspection provisions in Chapter 17 in favor of the Quality provisions of AISC 360 and 341 and changes in the way AISC 360 defines "structural steel". AISC 360 now defines "structural steel" as defined in the AISC Code of Standard Practice which excludes some steel elements that play a significant role in the gravity and lateral systems of buildings. The net result is that special inspection for steel is only defined for "structural steel" which means that many steel elements which would normally be subject to special inspection are no longer.

Some common steel elements excluded from the definition of structural steel include steel stairs, steel chords drags and collectors in wood buildings, steel braces in wood buildings, and steel embeds in concrete that are not supporting structural steel.

In response to this problem SEAOC and AISC developed code change proposals for the 2015 IBC (S140-12 and S238-12) to correct this problem. These proposal was recommended for approval at the ICC Code Hearings in Dallas and the new language is expected to be in the 2015 IBC and hence the 2016 CBC. While this problem will be corrected in the 2016 CBC, action needs to be taken now to correct the problem in the 2013 CBC

By adopting this proposed language the CBC will continue to require special inspection of these elements and eliminate the need to make comparable changes in the 2016 CBC.

We recognize that some are concerned about the fact that AISC 360 and 341 use the terms "observe" and "perform" instead of the terms "continuous" and "periodic" that were used in the 2009 IBC and hence 2010 CBC. We believe that this concern is a separate issue since that issue is not relevant for steel elements that are not "structural steel" until there are provisions requiring special inspection for these steel elements.

S140–12

1705.2, Table 1705.2.2, 1705.2.2.1.1, 1705.2.2.2, 1705.11.1, 1705.11.1.1 (NEW), 1705.11.1.2 (NEW), 1705.12.2, 1705.12.2.1 (NEW), 1705.12.2.2 (NEW)

Proponent: Bonnie Manley, P.E. American Iron and Steel Institute, representing American Institute of Steel Construction (bmanley@steel.org)

Revise as follows:

1705.2 Steel construction. ~~The *special inspections* for and nondestructive testing of steel elements of construction in buildings, and structures, and portions thereof shall be as required in accordance with this section.~~

Exception: *Special inspections* of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process. In such cases, the fabricator shall be required to submit a detailed procedure for material control that demonstrates the fabricator's ability to maintain suitable records and procedures such that, at any time during the fabrication process, the material specification, and grade for the main stress-carrying elements are capable of being determined. Mill test reports shall be identifiable to the main stress-carrying elements when required by the approved construction documents.

1705.2.1 Structural steel. ~~Special inspections and nondestructive testing for of structural steel~~ *structural steel elements* in buildings, structures, and portions thereof shall be in accordance with the quality assurance inspection requirements of AISC 360.

Exception: *Special inspection of railing systems composed of structural steel elements shall be limited to welding inspection of welds at the base of cantilevered rail posts.*

1705.2.2 Cold-formed steel construction other than structural steel deck and reinforcing. ~~Special inspections for steel construction other than structural steel of cold-formed steel deck and reinforcing steel in buildings, structures, and portions thereof shall be in accordance with Table 1705.2.2 and this section.~~

1705.2.2.1.1 Cold-formed steel deck. Welding inspection and welding inspector qualification for cold-formed steel floor and roof decks shall be in accordance with AWS D1.3.

~~1705.2.2.2~~ **1705.2.3 Cold-formed steel trusses spanning 60 feet or greater.** Where a cold-formed steel truss clear span is 60 feet (18 288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the *approved* truss submittal package.

**TABLE 1705.2.2
REQUIRED VERIFICATION AND SPECIAL INSPECTIONS OF STEEL CONSTRUCTION OTHER
THAN STRUCTURAL STEEL COLD-FORMED STEEL DECK AND REINFORCING STEEL**

VERIFICATION AND INSPECTION TYPE	CONTINUOUS	PERIODIC	REFERENCED STANDARD ^a
1. Material verification of cold-formed steel deck:			
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	—	X	Applicable ASTM material standards
b. Manufacturers' certified test reports.	—	X	
2. <u>Special inspection of welding:</u>			
a. Cold-formed steel deck:			

VERIFICATION AND INSPECTION TYPE	CONTINUOUS	PERIODIC	REFERENCED STANDARD^a
1) Floor and roof deck welds.	—	X	AWS D1.3
b. Reinforcing steel:			
1) Verification of weldability of reinforcing steel other than ASTM A 706.	—	X	AWS D1.4 or ACI 318: Section 3.5.2
2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls and shear reinforcement.	X	—	
3) Shear reinforcement.	X	—	
4) Other reinforcing steel.	—	X	

For SI: 1 inch = 25.4 mm.

a. Where applicable, see also Section 1705.11, Special inspections for seismic resistance.

1705.11.1 Structural steel. Special inspections for seismic resistance shall be in accordance with Sections 1705.11.1.1 or 1705.11.1.2, as applicable.

1705.11.1.1 Special inspections for structural steel of structural steel seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B, C, D, E or F shall be performed in accordance with the quality assurance requirements of AISC 341.

Exception: Special inspections of structural steel are not required in the seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B or C that are not specifically detailed for seismic resistance, with a response modification coefficient, R , of 3 or less, excluding cantilever column systems.

1705.11.1.2 Special inspections of structural steel elements in seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B, C, D, E or F other than those covered in Section 1705.11.1.1, including struts, collectors, chords and foundation elements, shall be performed in accordance with the quality assurance requirements of AISC 341.

Exception: Special inspections of structural steel elements are not required in the seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B or C with a response modification coefficient, R , less than 3.

1705.12.2 Structural steel. Nondestructive testing for seismic resistance shall be in accordance with Sections 1705.12.2.1 or 1705.12.2.2, as applicable.

1705.12.2.1 Nondestructive testing for of structural steel seismic-force resisting systems in buildings and structures assigned to Seismic Design Category B, C, D, E or F shall be performed in accordance with the quality assurance requirements of AISC 341.

Exception: Nondestructive testing for structural steel is not required in the seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B or C that are not specifically detailed for seismic resistance, with a response modification coefficient, R , of 3 or less, excluding cantilever column systems.

1705.12.2.2 Nondestructive testing of structural steel elements in seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B, C, D, E or F other than those covered in Section 1705.12.2.1, including struts, collectors, chords and foundation elements, shall be performed in accordance with the quality assurance requirements of AISC 341.

Exception: Nondestructive testing of structural steel elements is not required in the seismic-force resisting systems of buildings and structures assigned to Seismic Design Category B or C with a response modification coefficient, R , less than 3.

Reason: This comprehensive proposal not only makes a number of editorial modifications for clarification purposes, it also introduces into Chapter 17 the term and associated requirements for “structural steel elements”, which is handled in a companion proposal for Chapter 22. In that companion proposal, the definition of “structural steel member” is recommended for replacement by “structural steel element”, which is defined as follows:

STEEL ELEMENT, STRUCTURAL. Any steel structural member of a building or structure consisting of rolled shapes, pipe, hollow structural sections, plates, bars, sheets, rods, or steel castings other than cold-formed steel or steel joist members. The Chapter 22 companion proposal includes a comprehensive discussion in the reason statement – please refer to it for additional background. Building on that proposal’s reason statement, this proposal coordinates the existing special inspection and nondestructive testing requirements with the new terminology for structural steel elements. In Section 1705.2.1, changes clarify that structural steel elements in buildings, structures and portions thereof are to be inspected and tested in accordance with the quality assurance requirements in AISC 360. Current code requirements limit the special inspections to “structural steel.” The change to “structural steel elements” was made to explicitly include steel construction that is typically designed, fabricated, and constructed in accordance with AISC 360, but that does fall within the definition of structural steel in AISC 360 and the AISC Code of Standard Practice for Buildings and Bridges. An exception is provided for railing systems to reflect what is currently done for these systems and prevent the implementation of excessive requirements.

In Section 1705.11.1 on special inspections for seismic resistance the distinction is drawn between structural steel seismic-force resisting systems, which include the sixteen structural steel systems currently listed in ASCE 7-10, Table 12.2-1, and structural steel elements that work as struts, collectors, chords and foundation elements in seismic-force resisting systems composed of other structural materials. These structural steel elements should be inspected in accordance with the quality assurance requirements of AISC 341, if they are used in a seismic-force resisting system that relies heavily on non-elastic energy dissipation, in this case chosen as a system with a response modification coefficient, R , greater than 3. A parallel change is made in Section 1705.12.2 on nondestructive testing for seismic resistance.

Finally, the proposal includes a number of editorial modifications, including the following:

- It adds reference to “nondestructive testing” to clarify that the quality assurance provisions of AISC 360 and AISC 341 covers not only special inspections but also testing of welds. The use of “nondestructive” is the appropriate industry terminology.
- It modifies “steel elements” to “steel construction” in order to match the terminology used in Chapter 22.
- It recognizes that special inspections and testing may be required in buildings, structures or *portions thereof*.
- It changes the title in Section 1705.2.2 to specifically recognize the types of steel construction covered – cold-formed steel deck and reinforcing steel and to get away from the use of “structural steel”. Since the section is limited to cold-formed steel deck, Section 1705.2.2.2 on cold-formed steel trusses is shifted to a new sub-section, 1705.2.3.
- It clarifies that the requirements in Sections 1705.11.1 and 1705.12.2 apply to the seismic-force resisting systems of buildings and other structures.

Finally, it clarifies the appropriate SDCs for the requirements and exceptions in both Sections 1705.11.1 and 1705.12.2.

Cost Impact: The code change proposal will not increase the cost of construction.

S140-12

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

1705.2#1-S-MANLEY.doc

S238–12

202, 722.5.1, 722.5.1.1, 722.6.1.4, 722.5.1.4.1, 722.5.1.4.5, 722.5.2, 722.5.2.1, 722.5.2.2.1, 1615.3.2, 1809.11, 2205.1, 2205.2 (NEW), 2205.2.1 (NEW), 2205.2.1.1 (NEW), 2205.2.1.2 (NEW), 2205.2.2 (NEW), 2203.1, 2203.2, 2206.1, 2206.2, 2206.2.1 (NEW),

Proponent: Bonnie Manley, American Iron and Steel Institute, representing American Institute of Steel Construction (bmanley@steel.org)

Revise as follows:

SECTION 202 DEFINITIONS

STEEL MEMBER ELEMENT, STRUCTURAL. Any steel structural member of a building or structure consisting of ~~a rolled steel structural shape~~ rolled shapes, pipe, hollow structural sections, plates, bars, sheets, rods or steel castings other than cold-formed steel, or steel joist members.

Revise as follows:

722.5.1 Structural steel columns. The *fire-resistance ratings* of structural steel columns shall be based on the size of the element and the type of protection provided in accordance with this section.

722.5.1.1 General. These procedures establish a basis for determining the *fire resistance* of column assemblies as a function of the thickness of fire-resistant material and, the weight, W , and heated perimeter, D , of structural steel columns. As used in these sections, W is the average weight of a structural steel column in pounds per linear foot. The heated perimeter, D , is the inside perimeter of the fire-resistant material in inches as illustrated in Figure 722.5.1(1).

722.5.1.4 Concrete-protected columns. The *fire resistance* of structural steel columns protected with concrete, as illustrated in Figure 722.5.1(6) (a) and (b), shall be permitted to be determined from the following expression:

$$R = R_o(1 + 0.03_m) \quad \text{(Equation 7-14)}$$

where:

$$R_o = 10 (W/D)^{0.7} + 17 (h^{1.6}/k_c^{0.2}) \times [1 + 26 \{H/p_c c_c h (L + h)\}^{0.8}]$$

As used in these expressions:

- R = Fire endurance at equilibrium moisture conditions (minutes).
- R_o = Fire endurance at zero moisture content (minutes).
- m = Equilibrium moisture content of the concrete by volume (percent).
- W = Average weight of the structural steel column (pounds per linear foot).
- D = Heated perimeter of the structural steel column (inches).
- h = Thickness of the concrete cover (inches).
- k_c = Ambient temperature thermal conductivity of the concrete (Btu/hr ft °F).
- H = Ambient temperature thermal capacity of the structural steel column = $0.11W$ (Btu/ ft °F).
- p_c = Concrete density (pounds per cubic foot).
- c_c = Ambient temperature specific heat of concrete (Btu/lb °F).
- L = Interior dimension of one side of a square concrete box protection (inches).

722.5.1.4.1 Reentrant space filled. For wide-flange structural steel columns completely encased in concrete with all reentrant spaces filled [Figure 722.5.1(6)(c)], the thermal capacity of the concrete within the reentrant spaces shall be permitted to be added to the thermal capacity of the steel column, as follows:

$$H = 0.11 W + (p_c c_c / 144) (b_f d - A_s) \quad \text{(Equation 7-15)}$$

where:

- b_f = Flange width of the structural steel column (inches).
- d = Depth of the structural steel column (inches).
- A_s = Cross-sectional area of the steel column (square inches).

FIGURE 721.5.1(5)
WIDE FLANGE STRUCTURE STRUCTURAL STEEL COLUMNS WITH SPRAYED FIRE-RESISTANT MATERIALS

(No change to figure)

722.5.1.4.5 Masonry protection. The *fire resistance* of structural steel columns protected with concrete masonry units or clay masonry units as illustrated in Figure 722.5.1(7), shall be permitted to be determined from the following expression:

$$R = 0.17 (W/D)^{0.7} + [0.285 (T_e^{1.6}/K^{0.2})] \quad \text{(Equation 7-16)}$$

$$[1.0 + 42.7 \{(A_s/d_m T_e)/(0.25p + T_e)\}^{0.8}]$$

where:

- R = *Fire-resistance rating* of column assembly (hours).
- W = Average weight of structural steel column (pounds per foot).
- D = Heated perimeter of structural steel column (inches) [see Figure 722.5.1(7)].
- T_e = Equivalent thickness of concrete or clay masonry unit (inches) (see Table 722.3.2 Note a or Section 722.4.1).
- K = Thermal conductivity of concrete or clay masonry unit (Btu/hr · ft · °F) [see Table 722.5.1(3)].
- A_s = Cross-sectional area of structural steel column (square inches).
- d_m = Density of the concrete or clay masonry unit (pounds per cubic foot).
- p = Inner perimeter of concrete or clay masonry protection (inches) [see Figure 722.5.1(7)].

722.5.2 Structural steel beams and girders. The *fire resistance ratings* of structural steel beams and girders shall be based upon the size of the element and the type of protection provided in accordance with this section.

722.5.2.1 Determination of fire resistance. These procedures establish a basis for determining resistance of structural steel beams and girders which differ in size from that specified in *approved* fire-resistance-rated assemblies as a function of the thickness of fire-resistant material and the weight (W) and heated perimeter (D) of the beam or girder. As used in these sections, W is the average weight of a ~~structural steel member~~ *structural steel element* in pounds per linear foot (plf). The heated perimeter, D , is the inside perimeter of the fire-resistant material in inches as illustrated in Figure 722.5.2.

722.5.2.2.1 Minimum thickness. The use of Equation 7-17 is subject to the following conditions:

1. The weight-to-heated-perimeter ratio for the substitute beam or girder ($W2/D2$) shall not be less than 0.37.
2. The thickness of fire protection materials calculated for the substitute beam or girder ($T1$) shall not be less than 3/8 inch (9.5 mm).
3. The unrestrained or restrained beam rating shall not be less than 1 hour.
4. When used to adjust the material thickness for a restrained beam, the use of this procedure is

limited to structural steel sections classified as compact in accordance with the AISC ~~Specification for Structural Steel Buildings,~~ (AISC 360-05).

Revise as follows:

1615.3.2 Structural steel, open web steel joist or joist girder, or composite steel and concrete frame structures. Frame structures constructed with a structural steel frame or a frame composed of open web steel joists, joist girders with or without other ~~structural steel elements~~ structural steel elements or a frame composed of composite steel or composite steel joists and reinforced concrete elements shall conform to the requirements of this section.

Revise as follows:

1809.11 Steel grillage footings. Grillage footings of ~~structural steel shapes~~ structural steel elements shall be separated with *approved* steel spacers and be entirely encased in concrete with at least 6 inches (152 mm) on the bottom and at least 4 inches (102 mm) at all other points. The spaces between the shapes shall be completely filled with concrete or cement grout.

Revise as follows:

2203.1 Identification. Identification of ~~structural steel members~~ structural steel elements shall comply with the requirements contained in AISC 360. Identification of cold-formed steel members shall comply with the requirements contained in AISI S100. Identification of cold-formed steel light-frame construction shall also comply with the requirements contained in AISI S200. Other steel furnished for structural load-carrying purposes shall be properly identified for conformity to the ordered grade in accordance with the specified ASTM standard or other specification and the provisions of this chapter. Steel that is not readily identifiable as to grade from marking and test records shall be tested to determine conformity to such standards.

2203.2 Protection. Painting of ~~structural steel members~~ structural steel elements shall comply with the requirements contained in AISC 360. Painting of open-web steel joists and joist girders shall comply with the requirements of SJI CJ-1.0, SJI JG-1.1, SJI K-1.1 and SJI LH/DLH-1.1. Individual structural members and assembled panels of cold-formed steel construction shall be protected against corrosion in accordance with the requirements contained in AISI S100. Protection of cold-formed steel light-frame construction shall also comply with the requirements contained in AISI S200.

2205.1 General. The design, fabrication and erection of structural steel elements in for buildings, and structures, and portions thereof shall be in accordance with AISC 360. ~~Where required, the seismic design of structural steel structures shall be in accordance with the additional provisions of Section 2205.2.~~

2205.2 Seismic design. Where required, the seismic design, fabrication and erection of buildings, structures, and portions thereof shall be in accordance with Sections 2205.2.1 or 2205.2.2, as applicable.

2205.2.1 Seismic requirements for structural steel structures **Structural steel seismic-force resisting systems.** ~~The design, fabrication and erection of structural steel structures to resist seismic forces~~ seismic-force resisting systems shall be in accordance with the provisions of Section ~~2205.2.1~~ 2205.2.1.1 or 2205.2.2 2205.2.1.2, as applicable.

2205.2.1 2205.2.1.1 Seismic Design Category B or C. ~~Structural steel~~ Structures assigned to *Seismic Design Category B or C* shall be of any construction permitted in Section 2205. Where a response modification coefficient, R, in accordance with ASCE 7, Table 12.2-1 is used for the design of ~~structural steel~~ structures assigned to *Seismic Design Category B or C*, the structures shall be designed and detailed in accordance with the requirements of AISC 341.

Exception: The response modification coefficient, R, designated for “Steel systems not specifically detailed for seismic resistance, excluding cantilever column systems” in ASCE 7, Table 12.2-1 shall be permitted for systems designed and detailed in accordance with AISC 360, and need not be designed and detailed in accordance with AISC 341.

2205.2.2 Seismic Design Category D, E or F. Structural steel Structures assigned to *Seismic Design Category D, E or F* shall be designed and detailed in accordance with AISC 341, except as permitted in ASCE 7, Table 15.4-1.

2205.2.2 Structural steel elements. The design, fabrication and erection of *structural steel elements* in seismic-force resisting systems other than those covered in Section 2205.2.1, including struts, collectors, chords and foundation elements, shall be designed and detailed in accordance with AISC 341 if:

1. The structure is assigned to Seismic Design Category D, E or F, except as permitted in ASCE 7, Table 15.4-1.
2. A response modification coefficient, R, greater than 3 in accordance with ASCE 7, Table 12.2-1 is used for the design of the structure assigned to Seismic Design Category B or C.

2206.1 General. Systems of ~~structural steel~~ *structural steel elements* acting compositely with reinforced concrete shall be designed in accordance with AISC 360 and ACI 318, excluding ACI 318 Chapter 22. ~~Where required, the seismic design of composite steel and concrete systems shall be in accordance with the additional provisions of Section 2206.2.~~

2206.2 Seismic design. Where required, the seismic design, fabrication and erection of composite steel and concrete systems shall be in accordance with the additional provisions of this section.

2206.2 2206.2.1 Seismic requirements for composite structural steel and concrete construction.

Where a response modification coefficient, R, in accordance with ASCE 7, Table 12.2-1 is used for the design of systems of structural steel acting compositely with reinforced concrete, the structures shall be designed and detailed in accordance with the requirements of AISC 341.

Reason: This comprehensive proposal not only makes a number of editorial modifications for clarification purposes, it also introduces into Chapter 22 the term and associated requirements for “structural steel elements” and carries that change throughout the remainder of the IBC, as necessary. Note that the Chapter 17 proposal introducing this term is handled in a separate, companion proposal. Please refer to it for additional background.

The purpose of introducing this new term and its associated requirements is to ensure that the wide range of structural steel components in buildings, structures and portions thereof are appropriately covered for design, fabrication and erection. Concerns have been expressed by the structural engineering community regarding the limited definition of *structural steel* contained in AISC 360-10:

Structural steel. Steel elements as defined in Section 2.1 of the AISC *Code of Standard Practice for Steel Buildings and Bridges (AISC COSP)*.

Section 2.1 of AISC COSP goes on to list many items that are considered structural steel, and Section 2.1 identifies those items that are specifically excluded from the definition. However, these provisions in AISC COSP are intended to provide a default separation of scope between the work of the structural steel fabricator and erector, and the entity providing miscellaneous iron and steel.

Thus, the AISC COSP provides a definition of *structural steel* for default trade practices. Upon reflection, this is not an ideal definition for use in a model building code. To rectify this situation, this proposal introduces the defined term “structural steel element”. The specific change from “member” to “element” was to get away from the confusion caused by the difference between the general term, “steel structural member”, and the specific AISC-related term, “structural steel member”, used throughout the code. Also, language was added clarifying the types of rolled product that fall under this category of steel construction.

Once the definition was settled upon, the new term was integrated into Section 2205. In Section 2205.1, the intent is for all structural steel elements to be designed, fabricated and erected in accordance with AISC 360. Within the seismic design section, the distinction was drawn between structural steel seismic-force resisting systems, which refer to the sixteen structural steel systems currently listed in ASCE 7-10, Table 12.2-1, and structural steel elements that work as struts, collectors, chords and foundation elements in seismic-force resisting systems composed primarily of other structural materials. These structural steel elements are intended to be designed and detailed in accordance with AISC 341, if they are used in a structural in a high seismic area (SDC D, E or F) or they are utilized in a system that relies heavily on non-elastic energy dissipation, in this case chosen to be a system with a response modification coefficient, R, greater than 3.

The remainder of this proposal simply carries the newly defined term through the rest of the IBC.

Cost Impact:..No impact to the cost of construction is anticipated.

S238-11

Public Hearing: Committee:
Assembly:

AS
ASF

AM
AMF

D
DF

202-STEEL MEMBER, STRUCTURAL-G-MANLEY