Chapter 14
MATERIAL SPECIFIC SEISMIC DESIGN AND DETAILING REQUIREMENTS

14.0 SCOPE

Structural elements including foundation elements shall conform to the material design and detailing requirements set forth in this chapter or as otherwise specified for non-building structures in Tables 15.4-1 and 15.4-2.

14.1 STEEL

Structures, including foundations, constructed of steel to resist seismic loads shall be designed and detailed in accordance with this standard including the reference documents and additional requirements provided in this section.

14.1.1 Reference Documents

The design, construction, and quality of steel members that resist seismic forces shall conform to the applicable requirements, as amended herein, of the following:

1. AISC 360
2. AISC 341
3. AISI S100
4. AISI S110
5. AISI S230
6. AISI S213
7. ASCE 19
8. ASCE 8
9. SJI-K-1.1
10. SJI-LH/DLH-1.1
11. SJI-JG-1.1
12. SJI-CJ-1.0

14.1.2 Structural Steel

14.1.2.1 General

The design of structural steel for buildings and structures 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 14.1.2.2.

14.1.2.2 Seismic Requirements for Structural Steel Structures

The design of structural steel structures to resist seismic forces shall be in accordance with the provisions of Section 14.1.2.2.1 or 14.1.2.2.2, as applicable.

14.1.2.2.1 Seismic Design Categories B and C
Structural steel structures assigned to Seismic Design Category B or C shall be of any construction permitted by the applicable reference documents in Section 14.1.1. Where a response modification coefficient, *R*, in accordance with 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 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.

14.1.2.2.2 Seismic Design Categories D through 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 Table 15.4-1.

14.1.3 Cold-Formed Steel

14.1.3.1 General

The design of cold-formed carbon or low-alloy steel structural members shall be in accordance with the requirements of AISI S100 and the design of cold-formed stainless steel structural members shall be in accordance with the requirements of ASCE 8. Where required, the seismic design of cold-formed steel structures shall be in accordance with the additional provisions of Section 14.1.3.2.

14.1.3.2 Seismic Requirements for Cold-Formed Steel Structures

Where a response modification coefficient, *R*, in accordance with Table 12.2-1 is used for the design of