

Agenda Item 620-1035

Title: Allow Structural Steel materials listed in AISC for structural shapes

Date: Jan 30, 2024

Revision: 1

Handled By:

Name : Vivek Manjrekar
Company : Bechtel Energy, Tank Business Line
Phone : (713) 235-2628
E-mail : vsmanjre@bechtel.com

Purpose: Recognize structural steel material listed in AISC, and to align with section 4.4 of API 650, the following changes to Section 4.5 and 5.6 of API 620 is proposed.

Source: "Suggestion for Change"

Impact: Neutral

Rationale:

Structural Steel, especially roof framing is commonly designed in accordance with AISC. Some of the AISC listed materials such as A572-50 are not listed under section 4.5 "Structural Shapes" of API 620. API 650 recognizes "structural steels listed in AISC, Manual of Steel Construction", therefore, to align with API 650, it is proposed to add it to API 620 as well.

4.4 Structural Shapes

4.4.1 Structural steel shall conform to one of the following specifications.

- a) ASTM A36M/A36.
- b) ASTM A131M/A131.
- c) ASTM A992M/A992.

d) Structural Steels listed in AISC, Manual of Steel Construction.

- e) CSA G40.21, Grades 260W(38W), 300W(44W), 350W(50W), 260WT(38W 350WT(50WT). Imperial unit equivalent grades of CSA Specification G40.21, show acceptable.

Proposed addition to section 4.5 and 5.6 of API 620

4.5 Structural Shapes

h) Structural Steels listed in AISC, Manual of Steel Construction

NOTE Not all of the structural steel shapes listed in AISC are well suited for welding. Material selection for structural shapes requiring welded connections shall include confirmation of the material's weldability from the structural shape Manufacturer, other reputable sources, or by weld testing. Structural steel shapes having poor weldability shall only be used for bolted connection designs.

5.6 Maximum Allowable Stress Values for Structural Members and Bolts

5.6.1 Subject to the provisions of 5.6.5, the maximum stresses in internal or external diaphragms, webs, trusses, columns, and other framing, as determined for any of the loadings listed in 5.4 or any concurrent combination of such loadings expected to be encountered in the specified operation, shall not exceed the applicable allowable stresses given in Table 5-3. The allowable strength of the roof components shall be determined in accordance with ANSI/AISC 360 using allowable strength design methodology (ASD).