

SUPPLEMENT NO. 2

TO THE SPECIFICATION FOR THE DESIGN, FABRICATION & ERECTION OF STRUCTURAL STEEL FOR BUILDINGS

(ADOPTED FEBRUARY 12, 1969)

Effective December 8, 1971



**AMERICAN INSTITUTE
OF STEEL CONSTRUCTION**

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SECTION 1.4 MATERIAL

1.4.1 Structural Steel

1.4.1.1 Delete "*High-Strength Low Alloy Hot Rolled Steel Sheet and Strip, ASTM A375*".

Add the following to the list of approved materials:

"Steel Sheet and Strip, Hot-Rolled and Cold-Rolled, High-Strength, Low-Alloy, with Improved Corrosion Resistance, ASTM A606"

"Steel Sheet and Strip, Hot-Rolled and Cold-Rolled, High-Strength, Low-Alloy, Columbium and/or Vanadium, ASTM A607"

SECTION 1.8 STABILITY AND SLENDERNESS RATIOS

1.8.4 Maximum Ratios

In the second sentence, referring to tension members, delete the term "K" from the expression " Kl/r ".

SECTION 1.9 WIDTH-THICKNESS RATIOS

1.9.2 Stiffened Elements Under Compression

1.9.2.2 In the fifth line, add the word "box" between the words "rectangular" and "sections".

SECTION 1.10 PLATE GIRDERS AND ROLLED BEAMS

1.10.2 Web

Delete the paragraph in its entirety and substitute the following:

"The ratio of the clear distance between flanges to the web thickness shall not exceed

$$\frac{14,000}{\sqrt{F_y(F_y + 16.5)}}$$

except that when transverse stiffeners are provided, spaced not more than $1\frac{1}{2}$ times the girder depth, the limiting ratio may be $2,000/\sqrt{F_y}$, where F_y is the yield stress of the compression flange."

1.10.5 Stiffeners

1.10.5.3 In the first line, immediately ahead of “Intermediate stiffeners”, add the phrase “Subject to the limitations of Sect. 1.10.2,”

Delete the third paragraph in its entirety and substitute the following:

“In girders designed on the basis of tension field action, the spacing between stiffeners at end panels, at panels containing large holes and panels adjacent thereto shall be such that f_v does not exceed the value given by Formula (1.10-1).”

1.10.8 Splices

In the first sentence, delete the words “be complete penetration groove welds and shall”

SECTION 1.11 COMPOSITE CONSTRUCTION

1.11.2 Design Assumptions

1.11.2.2 Delete the last sentence of the second paragraph and substitute the following:

“For stress computations the compression area of lightweight or normal weight concrete shall be treated as an equivalent area of steel by dividing it by the modular ratio, n , for normal weight concrete of the strength specified when determining the section properties. For deflection calculations, the transformed section properties shall be based on the appropriate modular ratio, n , for the strength and weight concrete specified.”

1.11.4 Shear Connectors

In the third paragraph, fourth line, immediately following the words “is given in Table 1.11.4”, add the following:

“for concrete made with ASTM C33 aggregates. For concrete made with rotary kiln produced aggregates, conforming to ASTM C330 with concrete unit weight not less than 90 pcf, the allowable shear load for one connector is obtained by multiplying the values from Table 1.11.4 by the coefficient from Table 1.11.4A.”

Immediately following the footnote to Table 1.11.4, add Table 1.11.4A as follows:

TABLE 1.11.4A

Air dry unit weight, pcf	90	95	100	105	110	115	120
Coefficient	0.73	0.76	0.78	0.81	0.83	0.86	0.88

In the fourth paragraph, referring to incomplete composite action, add a second sentence as follows:

“The value of V'_h shall not be less than half the smaller value using Formulas (1.11-3) and (1.11-4).”

In the final (seventh) paragraph, add the following two sentences:

“Stud shear connectors shall be at least 4 diameters in length and not greater than $\frac{7}{8}$ -in. diameter. The minimum center-to-center spacing shall not be less than 3 diameters.”

SECTION 1.14 GROSS AND NET SECTION

1.14.5 Size of Holes

Delete the section in its entirety and substitute the following:

“In computing net area the diameter of a rivet or bolt hole shall be taken as $\frac{1}{16}$ -inch greater than the nominal dimension of the hole normal to the direction of applied stress.”

SECTION 1.15 CONNECTIONS

1.15.4 Unrestrained Members

Delete the second paragraph in its entirety and substitute the following:

“Flexible beam connections shall accommodate end rotations of unrestrained (simple) beams. To accomplish this, inelastic action in the connection is permitted.”

SECTION 1.16 RIVETS AND BOLTS

1.16.5 Minimum Edge Distance

In the heading of the right hand portion of Table 1.16.5, after “Minimum Edge Distance”, add a triple asterisk. Below the footnotes to the Table, add a third footnote as follows:

“*** When oversized or slotted holes are used, edge distances shall be increased so as to maintain the clear distance from edge of hole to free edge provided by distances tabulated.”

SECTION 1.18 BUILT-UP MEMBERS

1.18.2 Compression Members

1.18.2.6 Delete that portion of the sixth sentence which reads: "In determining the required section for lacing bars, Formulas (1.5-1) or (1.5-2) shall be used," and substitute the following:

"Lacing bars in compression may be treated as secondary members with"

SECTION 1.23 FABRICATION

1.23.5 Riveted and High Strength Bolted Construction—Assembling

Delete the fourth paragraph, referring to cold driven rivets, in its entirety.

In the fifth paragraph, delete the final word, "galvanizing", and replace with the following:

"other coatings except as listed below:

- (1) Hot-dip galvanizing, if contact surfaces are scored by wire brushing or blasting after galvanizing and prior to assembly.
- (2) Inorganic zinc rich paints as defined in those sections of the Steel Structures Painting Council Systems, SSPC PS 12.00 covering zinc rich paints with inorganic vehicles.
- (3) Metallized zinc or aluminum applied in accordance with AWS C2.2 Recommended Practice for Metallizing with Aluminum and Zinc for Protection of Iron and Steel, except that subsequent sealing treatments, described in Section IV therein, shall not be used."

1.23.6 Welded Construction

In the eighth paragraph, delete the third sentence, which reads: "Extension bars or run-off plates, if used, shall be removed upon completion of the weld and the ends of the weld made smooth and flush with the abutting parts." and substitute the following:

"Extension bars or run-off plates need not be removed upon completion of the weld unless so specified in bid documents."

APPENDIX C

SECTION C2 STRESS REDUCTION FACTOR—UNSTIFFENED COMPRESSION ELEMENTS

In the first sentence, between "hereinafter provided," and "unstiffened compression", add the words "stress on".

In the sentence following Formula (C2-2), immediately ahead of the words "compression flanges of girders:" add the words "projecting elements of".

In Table C1, change the heading of the second column to read: "Ratio of full flange width to profile depth".

SECTION C3 EFFECTIVE WIDTH—STIFFENED COMPRESSION ELEMENTS

Delete the definition for f and substitute the following:

" f = computed compressive stress in the stiffened elements based on the design properties as specified in Sect. C4. If unstiffened elements are included in the total cross-section, f for the stiffened element must be such that the maximum compressive stress in the unstiffened element does not exceed $F_c Q_s$ or $F_b Q_s$, as applicable."