Revision and Errata List – October 2010
AISC Steel Construction Manual, 13th Edition, Fourth Printing

The following list represents corrections that have been made in the Fifth Printing of the 13th Edition of the Steel Construction Manual

Page(s)	Item
1-5	In the last line, replace the last term $3t_{des}$ with $3t_{nom}$.
1-34	Replace the channel section name C8x18.5 with C8x18.75.
1-35	Replace the Nominal Wt. "18.5" in line 14 with "18.75."
1-108	In Table 1-16, the values for plastic section modulus and radius of gyration have been corrected. The corrected table is provided in the attached pages.
1-109	In Table 1-17, the values for plastic section modulus and radius of gyration have been corrected. The corrected table is provided in the attached pages
1-110	In Table 1-17, the values for plastic section modulus and radius of gyration have been corrected. The corrected table is provided in the attached pages
2-41	In footnote c of Table 2-5, "Section A3.3" should be changed to "Section J3.1."
3-82	In Table 3-7, "F_y = 50 ksi" should be changed to "F_y = 36 ksi."
3-85	Replace the channel section name C8x18.5 with C8x18.75.
3-83 –3-95	All of Table 3-8 and Table 3-9: Revise ϕ_v at the bottom left hand corner of the table to 0.90. The values tabulated remain correct.
3-137	Replace the channel section name C8x18.5 with C8x18.75.
3-139	Replace the channel section name C8x18.5 with C8x18.75.
6-3	In the third and fourth sentences in the paragraph below the table, two instances of the word "larger" should be changed to "smaller". The corrected sentences should read: "When the trial shape is unconservative and axial effects dominate, the second trial shape should be one with a **smaller** value of p. Similarly, when X-X axis or Y-Y axis flexural effects dominate, the second trial shape should be one with a **smaller** value of b_x or b_y, respectively."
7-82	In Table 7-17, the C_1 and P values have been corrected. The corrected table is provided in the attached pages.
8-13	In Figure 8-6, the figure at the bottom right, the equation for l should be changed to l=1.57R from l=3.14R.
8-61	Table 8-2 has been corrected. The corrected table is provided in the attached pages.
8-106	In Table 8-10, the C values have been corrected. The corrected table is provided in the attached pages.

9-38, 9-40, 9-42, 9-44, 9-46, 9-48 and 9-50

The footnotes for constants R_1, R_3 and R_4 should be deleted from Table 9-4.

10-12 The last two sentences of the final paragraph should be revised to read "2L4x3½ should be used for angle lengths equal to or greater than 18 in. For angle lengths less than 18 in., the 4-in. leg can be reduced to 3 in."

10-47, 10-48 In the figure for Table 10-3, the dimension for the angle leg welded to the beam (Weld A), which currently shows "3 in.", should be revised to "3 ½ in."

10-102 Under the heading *Dimensional Limitations*, item 2 should be rewritten as "The distance from the weld line to the bolt line closest to the support, *a*, is not limited."

10-103 Under the heading *Design Checks*, the first sentence of item 1 should be rewritten as "Determine the bolt group required for bolt shear and bolt bearing with eccentricity *e*, where *e* is defined as the distance from the support to the centroid of the bolt group."

10-160 In Table 10-12, the value for ASTM designation "A572-60, A572-65" and a thickness of "Over 2" should be 3½ *t*, not 1½ *t*.

16.1-16 In Table B4.1, in the first column, revise "Unjustified Elements" to "Unstiffened Elements".

16.1-33 In Section E3, revise the first User Note to read, "When the torsional unbraced length is larger than the lateral unbraced length, Section E4 may control the design of wide flange and similarly shaped columns."

16.1-45 Third row of table, column labeled "Web Slenderness", the entry should be "C, NC" (not "NC").

16.1-48 Equation F2-6 is missing a "2" at the end of the equation and should read,

$$L_r = 1.95 r_{ts} \frac{E}{0.7F_y} \sqrt{\frac{Jc}{S_x h_o}} \sqrt{1+\sqrt{1+6.76\left(\frac{0.7F_y}{E}\frac{S_x h_o}{Jc}\right)^2}}$$

16.1-79 In Section I2.1b, replace the definition of E_s with the following:

E_s = modulus of elasticity of steel = 29,000 ksi (200 000 MPa)

16.1-133: In Section K2.3c, the third limit should read, "(3) $\xi \geq 0.5(1-\beta_{eff})$."

16.1-138 Delete the variable, Q_f, in Equation K3-6.

16.1-182 In Table A-4.2.1, the heading for the fourth column should be "$k_u = F_{um}/F_{y.}$".

16.1-274 In Equation C-F4-4, replace F_{yr} with F_L where it appears in four places.

16.1-299 Replace Equation C-H3-2 with

$$A_o = (B-t)(H-t) - 9t^2\left(\frac{4-\pi}{4}\right)$$

16.1-331 Revise Section J2.2b, line 10, to read,

"…applies to all material greater than ¾ in. (19mm) in thickness, but minimum…"

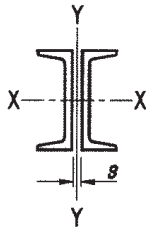
16.1-360 The equation for M_{a1} should be revised from $M_{a1} = M_{a1L} - M_{a1G}$ to $M_{a1} = M_{a1L} + M_{a1G}$.

The equation for M_{a2} should be revised from $M_{a2} = M_{a2L} + M_{a2G}$ to $M_{a2} = M_{a2L} - M_{a2G}$.

17-41 In the equation for a quarter ellipse, revise the equation $I_4 = \pi ab^3$ to read $I_4 = \frac{1}{16}\pi ab^3$.

2C SHAPES

Table 1–16
2C Shapes
Properties



Shape	Area, A	Axis Y-Y												Axis X-X
		Separation, s, in.												
		0				3/8				3/4				r_x
		I	S	r	Z	I	S	r	Z	I	S	r	Z	
	in.^{2}	in.^{4}	in.^{3}	in.	in.^{3}	in.^{4}	in.^{3}	in.	in.^{3}	in.^{4}	in.^{3}	in.	in.^{3}	in.
2C15×50	29.4	40.7	11.0	1.18	23.5	50.5	12.9	1.31	29.0	62.4	15.3	1.46	34.5	5.24
×40	23.5	32.6	9.25	1.18	18.4	40.2	10.9	1.31	22.8	49.6	12.7	1.45	27.2	5.45
×33.9	19.9	28.5	8.38	1.20	15.8	35.1	9.78	1.33	19.5	43.1	11.4	1.47	23.3	5.62
2C12×30	17.6	18.2	5.75	1.02	11.9	23.3	6.94	1.15	15.2	29.6	8.36	1.30	18.5	4.29
×25	14.7	15.6	5.11	1.03	9.89	19.8	6.12	1.16	12.6	25.0	7.32	1.31	15.4	4.43
×20.7	12.2	13.6	4.64	1.06	8.49	17.2	5.51	1.19	10.8	21.7	6.55	1.34	13.0	4.61
2C10×30	17.6	15.3	5.04	0.931	11.4	20.2	6.27	1.07	14.7	26.3	7.73	1.22	18.0	3.42
×25	14.7	12.3	4.25	0.914	9.06	16.2	5.27	1.05	11.8	21.1	6.48	1.20	14.6	3.52
×20	11.7	9.91	3.62	0.918	7.11	13.0	4.44	1.05	9.32	16.9	5.43	1.20	11.5	3.66
×15.3	8.96	8.14	3.13	0.953	5.68	10.6	3.80	1.09	7.36	13.7	4.59	1.23	9.04	3.87
2C9×20	11.7	8.80	3.32	0.866	6.84	11.8	4.15	1.00	9.05	15.6	5.15	1.15	11.2	3.22
×15	8.81	6.86	2.76	0.882	5.17	9.10	3.41	1.02	6.82	12.0	4.19	1.17	8.48	3.40
×13.4	7.88	6.34	2.61	0.897	4.74	8.39	3.20	1.03	6.21	11.0	3.92	1.18	7.69	3.49
2C8×18.75	11.0	7.46	2.95	0.823	6.23	10.2	3.75	0.962	8.29	13.7	4.71	1.11	10.4	2.82
×13.7	8.07	5.51	2.35	0.826	4.48	7.47	2.95	0.962	5.99	10.0	3.68	1.11	7.51	2.99
×11.5	6.74	4.82	2.13	0.846	3.86	6.50	2.66	0.982	5.12	8.66	3.29	1.13	6.38	3.11
2C7×14.7	8.66	5.18	2.25	0.773	4.61	7.21	2.90	0.912	6.23	9.85	3.68	1.07	7.85	2.51
×12.2	7.19	4.30	1.96	0.773	3.78	5.97	2.51	0.911	5.13	8.14	3.17	1.06	6.48	2.60
×9.8	5.73	3.59	1.72	0.791	3.11	4.95	2.17	0.929	4.18	6.72	2.73	1.08	5.26	2.72
2C6×13	7.63	4.11	1.91	0.734	3.92	5.85	2.50	0.876	5.35	8.13	3.21	1.03	6.77	2.13
×10.5	6.15	3.26	1.60	0.728	3.08	4.63	2.08	0.867	4.24	6.43	2.67	1.02	5.39	2.22
×8.2	4.78	2.63	1.37	0.741	2.45	3.72	1.76	0.881	3.34	5.14	2.24	1.04	4.24	2.34
2C5×9	5.28	2.45	1.30	0.682	2.52	3.59	1.73	0.824	3.51	5.09	2.25	0.982	4.50	1.83
×6.7	3.93	1.86	1.06	0.688	1.91	2.71	1.40	0.831	2.65	3.84	1.81	0.989	3.83	1.95
2C4×7.2	4.26	1.75	1.02	0.641	1.96	2.63	1.38	0.786	2.75	3.81	1.82	0.946	3.55	1.47
×5.4	3.16	1.29	0.812	0.637	1.44	1.94	1.10	0.783	2.04	2.82	1.44	0.943	2.63	1.56
×4.5	2.76	1.25	0.789	0.673	1.36	1.86	1.05	0.820	1.88	2.66	1.36	0.981	2.40	1.63
2C3×6	3.52	1.33	0.833	0.614	1.60	2.06	1.15	0.764	2.26	3.03	1.54	0.927	2.92	1.08
×5	2.94	1.05	0.699	0.597	1.29	1.63	0.969	0.746	1.84	2.43	1.30	0.909	2.39	1.12
×4.1	2.41	0.842	0.597	0.591	1.05	1.32	0.827	0.741	1.50	1.97	1.10	0.905	1.95	1.17
×3.5	2.18	0.766	0.558	0.593	0.966	1.20	0.772	0.743	1.37	1.80	1.03	0.908	1.78	1.20

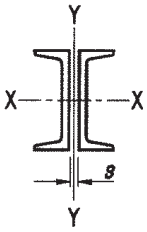


Table 1–17
2MC Shapes
Properties

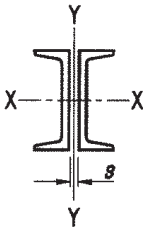
2MC18–2MC6

Shape	Area, A	Axis Y-Y, Separation, s, in.												Axis X-X
		0				3/8				3/4				
		I	S	r	Z	I	S	r	Z	I	S	r	Z	r_x
	in.^{2}	in.^{4}	in.^{3}	in.	in.^{3}	in.^{4}	in.^{3}	in.	in.^{3}	in.^{4}	in.^{3}	in.	in.^{3}	in.
2MC18×58	34.1	60.6	14.4	1.33	29.5	72.8	16.6	1.46	35.9	87.5	19.1	1.60	42.3	6.29
×51.9	30.5	55.0	13.4	1.34	26.3	65.9	15.4	1.47	32.0	79.0	17.6	1.61	37.7	6.41
×45.8	26.9	50.1	12.5	1.36	23.4	59.8	14.3	1.49	28.4	71.4	16.3	1.63	33.5	6.55
×42.7	25.1	47.8	12.1	1.38	22.1	57.0	13.8	1.51	26.8	67.9	15.7	1.64	31.6	6.64
2MC13×50	29.4	60.7	13.8	1.44	28.6	72.5	15.8	1.57	34.1	86.3	18.0	1.71	39.7	4.62
×40	23.5	49.1	11.7	1.45	22.7	58.4	13.4	1.58	27.2	69.4	15.2	1.72	31.6	4.82
×35	20.6	44.3	10.9	1.47	20.2	52.6	12.3	1.60	24.1	62.3	14.0	1.74	27.9	4.95
×31.8	18.7	41.5	10.4	1.49	18.7	49.2	11.7	1.62	22.2	58.2	13.3	1.76	25.7	5.05
2MC12×50	29.4	67.2	16.2	1.51	30.9	79.8	18.5	1.65	36.4	94.5	20.9	1.79	41.9	4.28
×45	26.4	59.9	14.9	1.51	27.5	71.1	16.9	1.64	32.4	84.1	19.2	1.79	37.4	4.36
×40	23.5	53.7	13.8	1.51	24.5	63.7	15.6	1.65	29.0	75.3	17.7	1.79	33.4	4.46
×35	20.5	48.0	12.7	1.53	21.6	56.8	14.4	1.66	25.5	67.1	16.2	1.81	29.4	4.59
×31	18.2	44.0	12.0	1.55	19.7	52.1	13.5	1.69	23.1	61.4	15.2	1.83	26.5	4.71
×10.6[c]	6.20	1.21	0.804	0.441	1.67	2.05	1.21	0.575	2.83	3.33	1.78	0.733	3.99	4.22
2MC10×41.1	24.2	60.0	13.9	1.58	26.4	70.7	15.7	1.71	30.9	83.1	17.7	1.85	35.5	3.61
×33.6	19.7	49.5	12.1	1.58	21.5	58.2	13.6	1.72	25.2	68.3	15.3	1.86	28.9	3.75
×28.5	16.7	43.5	11.0	1.61	18.7	51.1	12.3	1.75	21.9	59.8	13.8	1.89	25.0	3.89
2MC10×25	14.7	27.8	8.18	1.38	14.0	33.6	9.36	1.51	16.8	40.4	10.7	1.66	19.5	3.87
×22	12.9	25.4	7.67	1.40	12.8	30.7	8.76	1.54	15.2	36.8	10.0	1.69	17.6	3.99
2MC10×8.4[c]	4.91	1.05	0.700	0.462	1.40	1.75	1.03	0.596	2.32	2.79	1.49	0.753	3.24	3.61
×6.5[c]	3.90	0.414	0.354	0.326	0.757	0.835	0.615	0.463	1.49	1.53	0.990	0.626	2.22	3.43
2MC9×25.4	14.9	29.2	8.34	1.40	14.5	35.2	9.53	1.53	17.3	42.2	10.9	1.68	20.1	3.43
×23.9	14.0	27.8	8.05	1.41	13.8	33.4	9.19	1.54	16.4	40.1	10.5	1.69	19.0	3.48
2MC8×22.8	13.4	27.7	7.91	1.44	13.5	33.2	9.01	1.58	16.0	39.7	10.2	1.72	18.6	3.09
×21.4	12.6	26.3	7.63	1.45	12.8	31.6	8.68	1.59	15.2	37.7	9.86	1.73	17.5	3.13
2MC8×20	11.8	17.1	5.66	1.21	9.88	21.2	6.61	1.34	12.1	26.2	7.70	1.49	14.3	3.04
×18.7	11.0	16.2	5.45	1.21	9.34	20.1	6.35	1.35	11.4	24.8	7.39	1.50	13.5	3.09
2MC8×8.5	5.00	2.16	1.15	0.658	2.14	3.14	1.52	0.793	3.08	4.47	1.99	0.946	4.02	3.05
2MC7×22.7	13.3	29.0	8.06	1.47	13.9	34.7	9.16	1.61	16.4	41.3	10.4	1.76	18.9	2.67
×19.1	11.2	25.1	7.27	1.50	12.1	30.0	8.25	1.64	14.2	35.7	9.34	1.78	16.3	2.77
2MC6×18	10.6	25.0	7.13	1.54	11.8	29.8	8.07	1.68	13.8	35.3	9.11	1.83	15.8	2.37
×15.3	8.97	19.7	5.63	1.48	9.43	23.6	6.39	1.62	11.1	28.1	7.24	1.77	12.8	2.38

[c] Shape is slender for compression with $F_y = 36$ ksi.

2MC6–2MC3

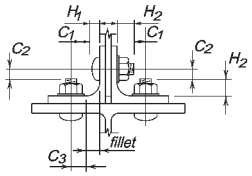
Table 1–17 (continued)
2MC Shapes
Properties



Shape	Area, A	Axis Y-Y												Axis X-X
		Separation, s, in.												
		0				3/8				3/4				r_x
		I	S	r	Z	I	S	r	Z	I	S	r	Z	
	in.^{2}	in.^{4}	in.^{3}	in.	in.^{3}	in.^{4}	in.^{3}	in.	in.^{3}	in.^{4}	in.^{3}	in.	in.^{3}	in.
2MC6×16.3	9.58	15.8	5.26	1.28	8.88	19.4	6.10	1.42	10.7	23.8	7.05	1.58	12.5	2.33
×15.1	8.88	14.8	5.02	1.29	8.35	18.2	5.82	1.43	10.0	22.3	6.71	1.58	11.7	2.37
2MC6×12	7.06	7.21	2.89	1.01	4.97	9.32	3.47	1.15	6.29	11.9	4.15	1.30	7.62	2.30
2MC6×7	4.18	2.25	1.20	0.734	2.09	3.19	1.55	0.873	2.88	4.41	1.96	1.03	3.66	2.34
×6.5	3.89	2.15	1.16	0.744	2.00	3.04	1.49	0.883	2.73	4.20	1.89	1.04	3.46	2.38
2MC4×13.8	8.06	10.1	4.03	1.12	6.84	12.9	4.81	1.27	8.35	16.3	5.68	1.42	9.87	1.48
2MC3×7.1	4.22	3.13	1.62	0.862	2.76	4.31	2.03	1.01	3.55	5.79	2.50	1.17	4.34	1.14

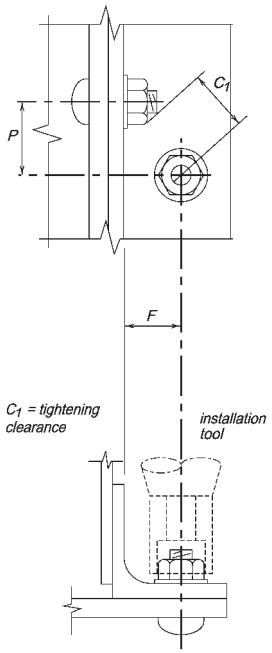
Table 7–17
Entering and Tightening Clearance, in. Tension Control ASTM F1852 and A490 Bolts

Aligned Bolts



Tools	Nominal Bolt Dia.	H_1	H_2	C_1	C_2	C_3 Circular	C_3 Clipped
Large Tools	**$4\frac{1}{4}$-in. Diameter Critical**						
	**$\frac{3}{4}$**	$\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{7}{8}$	$\frac{7}{8}$	$\frac{3}{4}$	–
	$\frac{7}{8}$	$\frac{9}{16}$	$1\frac{1}{2}$	$1\frac{7}{8}$	1	$\frac{7}{8}$	–
	1	$\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	$1\frac{1}{8}$	1	–
	$2\frac{3}{4}$-in. Diameter Critical						
	$\frac{3}{4}$	$\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{3}{8}$	$\frac{7}{8}$	$\frac{3}{4}$	–
	$\frac{7}{8}$	$\frac{9}{16}$	$1\frac{1}{2}$	$1\frac{3}{8}$	1	$\frac{7}{8}$	–
	1	$\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{3}{8}$	$1\frac{1}{8}$	1	–
Small Tools	**$3\frac{1}{8}$-in. Diameter Critical**						
	**$\frac{5}{8}$**	$\frac{7}{16}$	$1\frac{1}{4}$	$1\frac{5}{8}$	$\frac{13}{16}$	$\frac{11}{16}$	–
	$\frac{3}{4}$	$\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{5}{8}$	$\frac{7}{8}$	$\frac{3}{4}$	–
	$\frac{7}{8}$	$\frac{9}{16}$	$1\frac{1}{2}$	$1\frac{5}{8}$	1	$\frac{7}{8}$	–
	$2\frac{1}{8}$-in. Diameter Critical						
	$\frac{5}{8}$	$\frac{7}{16}$	$1\frac{1}{4}$	$1\frac{1}{8}$	$\frac{13}{16}$	$\frac{11}{16}$	–
	$\frac{3}{4}$	$\frac{1}{2}$	$1\frac{3}{8}$	$1\frac{1}{8}$	$\frac{7}{8}$	$\frac{3}{4}$	–
	$\frac{7}{8}$	$\frac{9}{16}$	$1\frac{1}{2}$	$1\frac{1}{8}$	1	$\frac{7}{8}$	–

Staggered Bolts



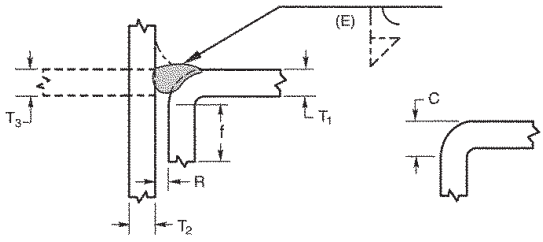
F	Stagger *P*, in. — Nominal Bolt Diameter, in. $\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	1
$1\frac{1}{4}$	$1\frac{13}{16}$			
$1\frac{3}{8}$	$1\frac{3}{4}$	$2\frac{1}{16}$	$2\frac{1}{4}$	$2\frac{7}{16}$
$1\frac{1}{2}$	$1\frac{11}{16}$	2	$2\frac{3}{16}$	$2\frac{3}{8}$
$1\frac{5}{8}$	$1\frac{9}{16}$	$1\frac{7}{8}$	$2\frac{1}{16}$	$2\frac{1}{4}$
$1\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{13}{16}$	2	$2\frac{3}{16}$
$1\frac{7}{8}$	$1\frac{7}{16}$	$1\frac{3}{4}$	$1\frac{7}{8}$	$2\frac{1}{8}$
2	$1\frac{5}{16}$	$1\frac{5}{8}$	$1\frac{3}{4}$	2
$2\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{9}{16}$	$1\frac{11}{16}$	$1\frac{15}{16}$
$2\frac{1}{4}$	$1\frac{3}{16}$	$1\frac{1}{2}$	$1\frac{9}{16}$	$1\frac{7}{8}$
$2\frac{3}{8}$	$1\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$
$2\frac{1}{2}$	1	$1\frac{5}{16}$	$1\frac{3}{8}$	$1\frac{11}{16}$
$2\frac{5}{8}$		$1\frac{3}{16}$	$1\frac{5}{16}$	$1\frac{9}{16}$
$2\frac{3}{4}$		$1\frac{1}{8}$	$1\frac{3}{16}$	$1\frac{1}{2}$
$2\frac{7}{8}$			$1\frac{1}{8}$	$1\frac{3}{8}$
3				$1\frac{5}{16}$
$3\frac{3}{8}$				$1\frac{5}{16}$

Notes:
H_1 = height of head
H_2 = maximum shank extension*
C_1 = clearance for tightening
C_2 = clearance for entering
C_3 = clearance for fillet*
P = bolt stagger
F = clearance for tightening staggered bolts
* Based on one standard hardened washer.

FLARE

Table 8–2 (continued)
Prequalified Welded Joints
Flare-Bevel Groove Welds

Flare-bevel-groove weld (10)
Butt joint (B)
T-joint (T)
Corner joint (C)



Welding Process	Joint Designation	Base Metal Thickness (U = unlimited)			Groove Preparation			Allowed Welding Positions	Total Weld Size (E)	Notes
					Root Opening Root Face Bend Radius*	Tolerances				
		T_1	T_2	T_3		As Detailed (see 3.12.3)	As Fit-Up (see 3.12.3)			
SMAW FCAW-S	BTC-P10	$^3/_{16}$ min	U	T_1 min	R = 0 f = $^3/_{16}$ min C = $\frac{3T_1}{2}$ min	$+^1/_{16}, -0$ +U, –0 +U, –0	$+^1/_8, -^1/_{16}$ +U, $-^1/_{16}$ +U, –0	All	$\frac{5T_1}{8}$	5, 7, 10, 12
GMAW FCAW-G	BTC-P10-GF	$^3/_{16}$ min	U	T_1 min	R = 0 f = $^3/_{16}$ min C = $\frac{3T_1}{2}$ min	$+^1/_{16}, -0$ +U, –0 +U, –0	$+^1/_8, -^1/_{16}$ +U, $-^1/_{16}$ +U, –0	All	$\frac{5T_1}{4}$	1, 7, 10, 12
SAW	B-P10-S	$^1/_2$ min	N/A	$^1/_2$ min	R = 0 f = $^1/_2$ min C = $\frac{3T_1}{2}$ min	±0 +U, –0 +U, –0	$+^1/_{16}, -0°$ +U, $-^1/_{16}$ +U, –0	F	$\frac{5T_1}{8}$	7, 10, 12

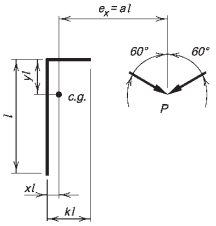
* For cold formed (A500) rectangular tubes, C dimension is not limited. See the following:
Effective Weld Size of Flare-Bevel-Groove Welded Joints. Tests have been performed on cold formed ASTM A 500 material exhibiting a "C" dimension as small as T1 with a nominal radius of 2t. As the radius increases, the "C" dimension also increases. The corner curvature may not be a quadrant of a circle tangent to the sides. The corner dimension, "C," may be less than the radius of the corner.

Table 8–10 (continued)
Coefficients *C* for Eccentrically Loaded Weld Groups
Angle = 60°

Available Strength of a weld group, ϕR_n or R_n/Ω, is determined with
$R_n = CC_1Dl$ ($\phi = 0.75$, $\Omega = 2.00$)
or

LRFD	ASD
$C_{min} = \frac{P_u}{\phi C_1 Dl}$ $D_{min} = \frac{P_u}{\phi C C_1 l}$ $l_{min} = \frac{P_u}{\phi C C_1 D}$	$C_{min} = \frac{\Omega P_a}{C_1 Dl}$ $D_{min} = \frac{\Omega P_a}{C C_1 l}$ $l_{min} = \frac{\Omega P_a}{C C_1 D}$

where
P = required force, P_u or P_a, kips
D = number of sixteenths-of-an-inch in the fillet weld size
l = characteristic length of weld group, in.
a = e_x / l
e_x = horizontal component of eccentricity of P with respect to centroid of weld group, in.
C = coefficient tabulated below
C_1 = electrode strength coefficient from Table 8-3 (1.0 for E70XX electrodes)



	k															
a	**0**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**1.0**	**1.2**	**1.4**	**1.6**	**1.8**	**2.0**
0.00	2.57	2.79	3.01	3.23	3.45	3.67	3.88	4.10	4.32	4.54	4.76	5.20	5.63	6.07	6.51	6.94
0.100	2.43	2.59	2.76	2.94	3.14	3.35	3.57	3.80	4.03	4.28	4.53	5.04	5.56	6.07	6.56	7.03
0.150	2.31	2.45	2.62	2.80	3.00	3.21	3.43	3.66	3.89	4.13	4.38	4.89	5.43	5.96	6.48	6.97
0.200	2.18	2.32	2.49	2.67	2.87	3.07	3.29	3.52	3.75	3.99	4.23	4.75	5.28	5.83	6.37	6.89
0.250	2.07	2.21	2.37	2.55	2.75	2.96	3.17	3.40	3.62	3.86	4.10	4.60	5.14	5.69	6.24	6.78
0.300	1.96	2.11	2.27	2.45	2.64	2.84	3.06	3.28	3.50	3.73	3.97	4.47	5.00	5.55	6.11	6.66
0.400	1.79	1.93	2.08	2.25	2.44	2.63	2.84	3.06	3.27	3.50	3.73	4.22	4.74	5.28	5.84	6.41
0.500	1.63	1.76	1.91	2.07	2.25	2.45	2.65	2.86	3.06	3.28	3.51	3.99	4.50	5.03	5.58	6.15
0.600	1.49	1.62	1.76	1.92	2.09	2.28	2.47	2.67	2.87	3.08	3.30	3.77	4.27	4.80	5.35	5.91
0.700	1.37	1.49	1.63	1.78	1.94	2.12	2.31	2.50	2.70	2.90	3.12	3.57	4.07	4.59	5.13	5.68
0.800	1.26	1.38	1.51	1.65	1.81	1.99	2.17	2.35	2.54	2.73	2.94	3.39	3.88	4.39	4.91	5.46
0.900	1.17	1.28	1.40	1.54	1.70	1.86	2.04	2.21	2.39	2.58	2.79	3.23	3.70	4.19	4.71	5.25
1.00	1.08	1.19	1.31	1.44	1.59	1.75	1.92	2.08	2.26	2.44	2.64	3.07	3.53	4.01	4.52	5.05
1.20	0.945	1.04	1.15	1.28	1.41	1.56	1.71	1.86	2.03	2.20	2.39	2.78	3.22	3.69	4.17	4.68
1.40	0.835	0.927	1.03	1.14	1.26	1.40	1.54	1.68	1.83	1.99	2.17	2.54	2.95	3.39	3.86	4.34
1.60	0.747	0.831	0.924	1.03	1.14	1.27	1.40	1.53	1.67	1.82	1.98	2.33	2.72	3.13	3.58	4.04
1.80	0.675	0.752	0.839	0.935	1.04	1.16	1.28	1.40	1.53	1.67	1.82	2.15	2.51	2.91	3.33	3.77
2.00	0.615	0.687	0.767	0.856	0.955	1.06	1.17	1.29	1.41	1.54	1.68	1.99	2.33	2.71	3.10	3.52
2.20	0.564	0.631	0.707	0.787	0.879	0.980	1.08	1.19	1.30	1.43	1.56	1.85	2.18	2.53	2.90	3.31
2.40	0.521	0.584	0.652	0.727	0.811	0.907	1.01	1.11	1.21	1.33	1.45	1.73	2.03	2.37	2.73	3.11
2.60	0.484	0.543	0.605	0.675	0.753	0.843	0.939	1.03	1.13	1.24	1.36	1.62	1.91	2.23	2.57	2.93
2.80	0.452	0.507	0.565	0.629	0.703	0.787	0.877	0.968	1.06	1.17	1.28	1.52	1.80	2.10	2.42	2.77
3.00	0.423	0.475	0.529	0.589	0.659	0.737	0.824	0.911	1.00	1.10	1.20	1.44	1.70	1.98	2.29	2.63
x	0.000	0.005	0.017	0.035	0.057	0.083	0.113	0.144	0.178	0.213	0.250	0.327	0.408	0.492	0.579	0.667
y	0.500	0.455	0.417	0.385	0.357	0.333	0.313	0.294	0.278	0.263	0.250	0.227	0.208	0.192	0.179	0.167