DESIGN TABLES

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Z_x

Table 7-1
W-Shapes (Welded)
Selection by Z_x

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W24×146	**386**	**512**	**770**	**15.8**	**23.7**	**67.1**	**101**	**578**	**869**	**8.07**	**12.2**	**78.3**	**200**	**301**
W24×131	**382**	**508**	**764**	**15.3**	**22.9**	**66.3**	**99.7**	**572**	**860**	**8.07**	**12.3**	**78.8**	**198**	**298**
W21×122	**317**	**422**	**634**	**11.3**	**17.0**	**53.2**	**80.0**	**475**	**714**	**7.83**	**12.5**	**85.0**	**175**	**264**
W21×111	**305**	**408**	**614**	**10.5**	**15.8**	**51.7**	**77.8**	**457**	**687**	**7.83**	**12.5**	**84.2**	**156**	**234**
W24×117	**299**	**396**	**596**	**15.6**	**23.4**	**56.5**	**85.0**	**447**	**672**	**7.83**	**11.1**	**64.5**	**176**	**265**
W24×104	**288**	**385**	**579**	**14.2**	**21.3**	**55.1**	**82.8**	**431**	**648**	**7.91**	**11.2**	**64.1**	**150**	**226**
W24×94	**273**	**360**	**542**	**17.3**	**26.0**	**55.0**	**82.7**	**409**	**615**	**5.63**	**8.45**	**53.5**	**152**	**229**
W18×106	242	320	481	8.04	12.1	39.5	59.3	362	544	7.14	12.4	89.1	151	227
W21×101	**240**	**321**	**483**	**10.9**	**16.4**	**44.9**	**67.5**	**359**	**540**	**7.67**	**11.1**	**67.3**	**138**	**208**
W18×97	234	311	468	7.58	11.4	38.6	58.1	350	526	7.12	12.2	87.9	135	202
W14×132	227	304	457	3.45	5.19	29.9	45.0	339	510	9.68	19.9	155	119	178
W21×93	**227**	**297**	**446**	**14.2**	**21.4**	**44.3**	**66.6**	**340**	**511**	**5.22**	**8.28**	**55.7**	**156**	**235**
W14×120	223	298	448	3.40	5.11	29.2	43.8	334	501	9.71	20.2	157	117	176
W24×84	**215**	**283**	**425**	**17.9**	**26.9**	**47.2**	**71.0**	**322**	**485**	**5.46**	**7.67**	**43.7**	**128**	**193**
W24×76	213	279	420	17.6	26.4	46.5	70.0	318	478	5.44	7.66	43.8	128	192
W14×109	213	287	432	3.07	4.62	28.1	42.3	319	479	9.72	20.1	157	92.5	139
W16×100	198	262	395	6.14	9.23	32.1	48.3	296	445	6.71	12.2	90.5	123	185
W16×89	192	256	384	5.65	8.49	31.2	46.9	287	431	6.75	12.3	91.1	109	163
W18×86	183	244	367	8.03	12.1	33.6	50.5	273	411	6.98	10.7	68.8	119	179
W21×83	**179**	**233**	**350**	**15.1**	**22.8**	**38.4**	**57.7**	**267**	**402**	**5.04**	**7.34**	**44.4**	**138**	**208**
W21×73	**171**	**224**	**337**	**13.9**	**20.8**	**37.2**	**55.9**	**256**	**385**	**5.06**	**7.34**	**44.1**	**121**	**181**
W24×68	**168**	**220**	**330**	**17.5**	**26.2**	**39.0**	**58.7**	**252**	**379**	**5.29**	**7.15**	**38.0**	**110**	**165**
W14×99	167	227	341	3.42	5.14	25.0	37.6	251	377	9.52	16.4	118	91.8	138
W12×106	164	217	326	2.71	4.07	21.6	32.5	245	368	8.09	18.6	149	104	157
W14×90	162	220	331	3.19	4.79	24.3	36.4	242	364	9.50	16.4	118	81.5	122
W12×96	159	211	317	2.52	3.79	21.0	31.5	238	357	8.13	18.8	150	92.0	138
W24×62	**158**	**202**	**303**	**23.0**	**34.6**	**38.9**	**58.4**	**237**	**356**	**4.05**	**5.58**	**30.7**	**127**	**190**
W14×82	153	204	306	3.67	5.52	23.3	35.0	229	345	6.64	13.7	106	92.5	139

ASD	LRFD
$\Omega_b = 1.67$ $\Omega_v = 1.67$	$\phi_b = 0.90$ $\phi_v = 0.90$

Austenitic
Stainless Steel

$F_y = 30$ ksi

Table 7-1 (continued)
W-Shapes (Welded)
Selection by Z_x

Z_x

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W21×68	**150**	**195**	**294**	**14.7**	**22.1**	**33.9**	**51.0**	**225**	**338**	**4.93**	**6.93**	**39.6**	**120**	**180**
W18×76	150	202	304	7.48	11.2	29.7	44.7	225	338	6.89	9.94	59.3	96.5	145
W16×77	147	197	296	6.02	9.05	26.9	40.5	220	331	6.55	10.4	69.8	96.0	144
W21×62	**145**	**190**	**286**	**13.6**	**20.5**	**33.1**	**49.8**	**217**	**326**	**4.96**	**6.94**	**39.2**	**104**	**156**
W18×71	138	179	269	11.0	16.5	29.0	43.6	206	310	4.66	7.13	46.0	120	180
W24×55	**133**	**169**	**254**	**22.6**	**34.0**	**34.0**	**51.1**	**200**	**300**	**3.94**	**5.30**	**27.8**	**109**	**164**
W18×65	133	174	261	10.2	15.4	28.3	42.6	199	298	4.68	7.09	45.3	107	161
W18×60	128	168	253	9.41	14.1	27.4	41.3	191	287	4.70	7.10	45.3	96.5	145
W21×57	124	160	240	17.1	25.7	30.8	46.4	186	280	3.85	5.39	30.5	104	157
W16×67	123	165	248	6.02	9.05	24.1	36.2	184	277	6.42	9.58	60.0	86.4	130
W12×87	122	164	246	2.70	4.06	18.4	27.6	182	274	7.91	14.8	112	80.8	122
W21×55	**120**	**157**	**236**	**13.3**	**19.9**	**28.7**	**43.1**	**180**	**270**	**4.86**	**6.60**	**35.2**	**90.0**	**135**
W14×74	120	161	242	4.07	6.12	20.7	31.2	180	270	6.51	11.1	79.8	82.6	124
W12×79	119	161	241	2.56	3.84	18.1	27.1	178	268	7.95	14.9	112	72.2	108
W14×68	115	155	233	3.78	5.69	20.0	30.1	173	260	6.48	11.1	79.6	74.2	112
W10×88	113	147	222	1.81	2.72	14.5	21.8	169	254	6.90	18.9	155	87.3	131
W18×55	111	146	219	10.1	15.2	25.2	37.8	167	251	4.58	6.63	39.8	96.0	144
W16×57	109	142	214	7.82	11.7	22.7	34.1	162	244	4.42	7.03	47.4	95.5	143
W21×48	**108**	**140**	**211**	**12.8**	**19.2**	**26.2**	**39.4**	**161**	**242**	**4.78**	**6.42**	**33.6**	**80.5**	**121**
W10×77	107	141	212	1.64	2.47	13.8	20.8	160	241	6.89	18.9	154	68.6	103
W21×50	**103**	**132**	**198**	**16.6**	**24.9**	**26.6**	**40.0**	**154**	**232**	**3.75**	**5.11**	**27.4**	**90.0**	**135**
W12×72	101	137	206	2.72	4.09	16.5	24.8	152	228	7.77	13.2	94.0	71.6	108
W18×50	98.2	130	195	9.34	14.0	23.2	34.8	147	221	4.57	6.43	36.7	76.1	114
W14×61	98.0	132	199	3.87	5.82	18.3	27.5	147	220	6.41	10.1	67.6	67.4	101
W12×65	97.1	132	199	2.44	3.66	16.0	24.0	145	218	7.84	13.2	94.0	58.7	88.2
W21×44	**93.5**	**120**	**180**	**16.0**	**24.1**	**24.7**	**37.1**	**140**	**210**	**3.71**	**4.99**	**26.1**	**80.6**	**121**
W18×46	91.0	119	179	11.0	16.5	22.7	34.1	136	205	3.67	5.25	31.0	76.6	115
W16×50	90.5	119	179	7.64	11.5	20.4	30.7	135	204	4.36	6.48	40.3	79.1	119
W12×58	82.8	112	169	2.68	4.02	14.7	22.1	124	186	6.50	10.9	76.8	55.2	83.0
W10×68	82.0	109	164	1.75	2.63	12.2	18.3	123	185	6.68	14.4	113	60.5	91.0
W14×53	81.9	109	164	4.50	6.77	16.6	24.9	123	184	5.10	8.05	53.8	67.4	101
W16×45	80.9	107	161	7.43	11.2	18.9	28.4	121	182	4.32	6.24	37.4	72.1	108
W14×48	79.9	107	161	4.27	6.41	16.3	24.4	120	180	5.11	8.05	53.7	62.5	93.9
W12×53	75.2	102	153	2.74	4.12	13.9	20.9	113	169	6.45	10.3	70.1	54.8	82.3

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Z_x

Table 7-1 (continued)
W-Shapes (Welded)
Selection by Z_x

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W18×40	**74.7**	**97.3**	**146**	**10.8**	**16.2**	**19.7**	**29.6**	**112**	**168**	**3.58**	**4.93**	**27.2**	**63.7**	**95.8**
W8×67	73.1	93.9	141	1.20	1.80	9.25	13.9	109	164	5.63	18.6	153	65.2	98.0
W16×40	71.9	95.2	143	7.09	10.7	17.4	26.2	108	162	4.28	6.03	34.5	60.5	91.0
W12×50	69.7	93.2	140	3.16	4.74	13.3	20.0	104	157	5.18	8.72	61.6	59.2	88.9
W10×60	68.7	92.2	139	1.76	2.65	11.0	16.6	103	154	6.62	12.6	95.2	54.1	81.3
W10×54	66.6	89.7	135	1.68	2.52	10.8	16.2	99.6	150	6.58	12.5	94.6	49.0	73.6
W16×36	**66.2**	**87.3**	**131**	**7.20**	**10.8**	**16.4**	**24.6**	**99.1**	**149**	**4.22**	**5.86**	**32.7**	**60.2**	**90.4**
W14×43	65.4	87.9	132	4.31	6.48	14.4	21.7	97.9	147	5.02	7.36	44.9	55.4	83.2
W18×35	**64.8**	**83.4**	**125**	**11.1**	**16.7**	**17.5**	**26.3**	**97.1**	**146**	**3.47**	**4.70**	**25.0**	**63.1**	**94.8**
W12×45	62.6	83.9	126	3.16	4.75	12.5	18.8	93.7	141	5.13	8.23	55.9	54.8	82.3
W10×49	59.6	80.7	121	1.67	2.51	10.1	15.2	89.3	134	6.54	11.7	85.5	45.2	67.9
W14×38	59.5	79.0	119	5.30	7.97	14.1	21.1	89.0	134	4.19	6.09	36.7	56.9	85.5
W8×58	55.9	73.1	110	1.24	1.86	8.14	12.2	83.7	126	5.47	14.0	113	56.6	85.1
W10×45	54.3	72.8	109	1.84	2.76	9.60	14.4	81.4	122	5.24	9.90	74.8	45.7	68.7
W16×31	**54.2**	**70.8**	**106**	**8.23**	**12.4**	**14.8**	**22.2**	**81.1**	**122**	**3.30**	**4.56**	**25.2**	**51.0**	**76.6**
W12×40	54.2	73.4	110	2.83	4.25	11.4	17.2	81.1	122	5.15	7.87	50.8	43.1	64.8
W14×34	53.2	70.9	107	5.03	7.55	13.0	19.6	79.6	120	4.17	5.90	34.2	48.1	72.2
W12×35	49.7	66.1	99.3	3.97	5.97	11.4	17.1	74.4	112	4.10	6.19	39.4	50.5	75.9
W14×30	**45.8**	**60.6**	**91.1**	**5.10**	**7.67**	**11.6**	**17.4**	**68.6**	**103**	**4.07**	**5.63**	**31.2**	**47.5**	**71.3**
W8×48	45.3	60.1	90.3	1.20	1.81	7.23	10.9	67.8	102	5.35	11.8	93.5	45.1	67.7
W10×39	43.9	59.1	88.9	1.88	2.82	8.51	12.8	65.7	98.7	5.16	8.63	60.8	40.1	60.3
W16×26	**43.6**	**56.7**	**85.2**	**7.83**	**11.8**	**12.4**	**18.7**	**65.3**	**98.1**	**3.22**	**4.32**	**22.5**	**42.3**	**63.6**
W12×30	42.9	57.7	86.7	3.48	5.23	10.3	15.5	64.2	96.5	4.10	5.97	36.2	38.2	57.4
W8×40	39.2	52.4	78.8	1.12	1.69	6.57	9.87	58.7	88.2	5.32	10.9	84.7	37.3	56.1
W10×33	38.7	52.4	78.8	1.78	2.68	7.84	11.8	57.9	87.1	5.13	8.21	55.7	35.2	53.0
W14×26	38.5	50.5	75.9	6.08	9.14	10.8	16.2	57.7	86.7	3.03	4.21	23.5	40.3	60.5
W10×30	36.1	47.8	71.9	2.71	4.08	8.07	12.1	54.1	81.3	3.67	5.96	41.0	42.4	63.8
W12×26	36.0	48.5	72.9	3.31	4.98	9.17	13.8	53.9	81.0	4.05	5.66	32.1	31.2	46.9
W8×35	34.5	46.5	69.8	1.10	1.66	6.10	9.17	51.7	77.7	5.26	10.0	75.7	32.8	49.3
W14×22	**32.7**	**42.9**	**64.5**	**5.59**	**8.40**	**9.52**	**14.3**	**48.9**	**73.5**	**2.99**	**4.06**	**21.7**	**32.8**	**49.2**
W10×26	31.1	41.7	62.6	2.43	3.65	7.33	11.0	46.6	70.0	3.66	5.67	37.2	33.3	50.1
W8×31	30.7	41.6	62.5	1.07	1.61	5.69	8.55	46.0	69.1	5.24	9.34	68.6	29.0	43.5

ASD	LRFD
$\Omega_b = 1.67$ $\Omega_v = 1.67$	$\phi_b = 0.90$ $\phi_v = 0.90$

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-1 (continued)
W-Shapes (Welded)
Selection by Z_x

Z_x

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W12×22	**27.9**	**36.1**	**54.3**	**5.45**	**8.19**	**8.19**	**12.3**	**41.7**	**62.7**	**2.41**	**3.44**	**20.2**	**38.0**	**57.2**
W8×28	26.0	34.9	52.4	1.22	1.84	5.20	7.82	38.9	58.5	4.24	7.54	55.2	29.2	43.9
W10×22	25.5	33.9	51.0	2.61	3.93	6.45	9.70	38.1	57.3	3.56	5.17	31.1	33.0	49.6
W12×19	**23.9**	**31.0**	**46.6**	**5.18**	**7.79**	**7.35**	**11.0**	**35.8**	**53.8**	**2.38**	**3.30**	**18.3**	**31.1**	**46.8**
W8×24	23.2	31.3	47.1	1.17	1.76	4.84	7.28	34.7	52.2	4.21	7.13	50.6	25.6	38.5
W10×19	21.6	28.2	42.5	3.29	4.95	5.97	8.97	32.4	48.7	2.46	3.72	23.7	33.0	49.6
W8×21	20.5	27.3	41.1	1.51	2.27	4.71	7.08	30.7	46.1	3.36	5.57	38.9	26.8	40.2
W12×16	**19.0**	**24.1**	**36.3**	**5.46**	**8.21**	**6.06**	**9.11**	**28.4**	**42.7**	**2.25**	**3.04**	**16.0**	**30.6**	**46.0**
W6×25	18.6	24.6	37.0	0.694	1.04	3.38	5.08	27.8	41.8	3.99	8.56	67.4	25.8	38.8
W10×17	17.9	23.1	34.7	3.59	5.40	5.24	7.87	26.8	40.3	2.37	3.40	20.1	32.7	49.1
W12×14	**17.4**	**21.9**	**33.0**	**5.52**	**8.29**	**5.60**	**8.42**	**26.1**	**39.2**	**2.20**	**2.95**	**15.4**	**30.4**	**45.7**
W8×18	16.4	21.8	32.7	1.62	2.44	4.08	6.14	24.5	36.9	3.27	4.97	31.9	26.3	39.6
W10×15	15.4	19.6	29.4	3.72	5.59	4.62	6.94	23.0	34.6	2.29	3.22	18.4	32.3	48.6
W6×20	15.0	20.1	30.3	0.663	0.997	2.98	4.48	22.5	33.8	3.94	7.43	56.0	20.0	30.1
W8×15	13.3	17.4	26.1	1.98	2.97	3.63	5.45	19.9	30.0	2.45	3.75	24.3	26.2	39.4
W10×12	**12.4**	**16.1**	**24.2**	**3.00**	**4.51**	**3.99**	**6.00**	**18.5**	**27.8**	**2.32**	**3.13**	**16.5**	**20.3**	**30.4**
W6×16	11.6	15.2	22.9	0.820	1.23	2.58	3.88	17.3	26.0	2.61	5.16	39.7	20.3	30.5
W8×13	11.2	14.5	21.8	2.05	3.08	3.18	4.78	16.8	25.3	2.37	3.51	21.7	25.8	38.8
W5×19	11.1	14.6	21.9	0.432	0.649	2.04	3.07	16.6	24.9	3.33	7.95	63.9	18.7	28.0
W6×15[f1]	10.3	13.9	20.8	0.679	1.02	2.36	3.55	14.2	21.3	3.82	6.02	40.2	17.0	25.6
W5×16	9.32	12.4	18.6	0.422	0.635	1.84	2.77	13.9	21.0	3.29	7.01	55.1	16.2	24.3
W8×10	**9.13**	**12.0**	**18.1**	**1.75**	**2.62**	**2.81**	**4.23**	**13.7**	**20.5**	**2.37**	**3.32**	**18.8**	**18.2**	**27.3**
W6×12	8.09	10.7	16.1	0.867	1.30	2.07	3.12	12.1	18.2	2.51	4.15	28.8	17.2	25.8
W6×9	**6.25**	**8.33**	**12.5**	**0.834**	**1.25**	**1.77**	**2.66**	**9.36**	**14.1**	**2.45**	**3.69**	**23.4**	**13.6**	**20.4**
W4×13	6.25	8.14	12.2	0.285	0.428	1.20	1.80	9.36	14.1	2.68	6.96	56.5	15.1	22.6

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f1] Shape exceeds compact limit for flexure with $F_y = 30$ ksi; tabulated values have been adjusted accordingly.

Z_x

Table 7-2
W-Shapes (Welded)
Selection by Z_x

Duplex Stainless Steel

$F_y = 65$ ksi

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W24×146	**386**	**1110**	**1670**	**46.1**	**69.3**	**189**	**284**	**1250**	**1880**	**6.82**	**9.91**	**44.2**	**387**	**582**
W24×131	**382**	**1100**	**1650**	**44.7**	**67.2**	**187**	**281**	**1240**	**1860**	**6.82**	**9.93**	**44.4**	**386**	**580**
W21×122	**317**	**914**	**1370**	**35.2**	**52.9**	**152**	**228**	**1030**	**1550**	**6.62**	**9.90**	**46.5**	**365**	**548**
W21×111	**305**	**885**	**1330**	**32.5**	**48.8**	**147**	**221**	**991**	**1490**	**6.61**	**9.87**	**46.1**	**308**	**463**
W24×117[f2]	**299**	**859**	**1290**	**41.4**	**62.3**	**155**	**234**	**867**	**1300**	**6.62**	**9.29**	**38.7**	**321**	**483**
W24×104[f2]	**288**	**834**	**1250**	**37.4**	**56.2**	**151**	**227**	**842**	**1260**	**6.68**	**9.36**	**38.7**	**268**	**403**
W24×94	**273**	**781**	**1170**	**50.0**	**75.1**	**155**	**232**	**887**	**1330**	**4.75**	**6.88**	**30.4**	**273**	**410**
W18×106	242	693	1040	26.8	40.3	114	171	784	1180	6.03	9.43	47.2	328	492
W21×101[f2]	**240**	**696**	**1050**	**30.2**	**45.3**	**125**	**188**	**718**	**1080**	**6.48**	**9.21**	**39.3**	**256**	**384**
W18×97	234	675	1010	25.1	37.8	111	167	759	1140	6.02	9.36	46.7	288	433
W14×132[f2]	227	659	990	12.7	19.1	86.8	130	717	1080	8.18	14.2	79.3	257	386
W21×93	**227**	**642**	**966**	**43.8**	**65.9**	**126**	**190**	**737**	**1110**	**4.41**	**6.57**	**30.6**	**309**	**464**
W14×120[f2]	223	646	971	12.6	18.9	84.5	127	706	1060	8.20	14.3	80.6	254	382
W24×84	**215**	**613**	**921**	**46.8**	**70.3**	**129**	**194**	**699**	**1050**	**4.61**	**6.44**	**26.5**	**227**	**341**
W24×76	213	605	909	46.1	69.3	128	192	689	1040	4.60	6.43	26.5	226	340
W14×109[f2]	213	622	935	11.3	17.0	81.5	122	678	1020	8.21	14.3	80.3	200	301
W16×100	198	569	855	21.2	31.9	92.7	139	642	965	5.67	9.11	47.4	267	401
W16×89	192	554	833	19.5	29.3	90.1	135	622	935	5.70	9.17	47.7	233	350
W18×86[f2]	183	528	794	23.7	35.6	94.8	143	576	866	5.90	8.60	38.6	239	359
W21×83	**179**	**504**	**757**	**41.9**	**63.0**	**107**	**160**	**580**	**871**	**4.26**	**6.06**	**25.9**	**256**	**384**
W21×73	**171**	**486**	**731**	**38.1**	**57.2**	**103**	**155**	**555**	**833**	**4.28**	**6.07**	**25.9**	**216**	**325**
W24×68[f2]	**168**	**476**	**715**	**42.7**	**64.1**	**105**	**157**	**499**	**750**	**4.47**	**6.12**	**24.2**	**192**	**289**
W14×99[f2]	167	492	739	11.4	17.1	71.9	108	451	677	8.04	12.5	62.7	199	299
W12×106	164	469	705	10.3	15.5	62.8	94.3	531	798	6.83	12.8	75.5	226	340
W14×90[f2]	162	477	717	10.6	15.9	69.7	105	438	659	8.03	12.5	62.6	177	265
W12×96	159	457	687	9.60	14.4	60.8	91.4	515	774	6.87	12.9	76.3	199	300
W24×62	**158**	**437**	**657**	**58.2**	**87.5**	**105**	**158**	**513**	**771**	**3.42**	**4.74**	**19.1**	**224**	**337**
W14×82	153	441	663	13.5	20.3	67.5	101	497	747	5.61	9.75	54.5	200	301

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Duplex
Stainless Steel

$F_y = 65$ ksi

Table 7-2 (continued)
W-Shapes (Welded)
Selection by Z_x

Z_x

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W21×68	**150**	**423**	**636**	**38.4**	**57.8**	**92.9**	**140**	**487**	**732**	**4.17**	**5.82**	**24.0**	**214**	**322**
W18×76[f2]	150	438	658	20.4	30.7	82.4	124	431	647	5.82	8.24	34.9	175	262
W16×77	147	427	641	18.5	27.8	76.5	115	477	717	5.54	8.24	38.3	194	292
W21×62	**145**	**412**	**619**	**35.4**	**53.2**	**90.5**	**136**	**470**	**706**	**4.19**	**5.84**	**23.9**	**185**	**278**
W18×71	138	388	584	32.3	48.6	81.9	123	447	672	3.94	5.75	25.9	240	360
W24×55[f2]	**133**	**365**	**549**	**54.7**	**82.3**	**90.9**	**137**	**421**	**633**	**3.33**	**4.55**	**17.9**	**191**	**288**
W18×65	133	377	566	29.9	44.9	79.8	120	430	646	3.95	5.74	25.6	204	307
W18×60	128	365	548	27.4	41.2	77.2	116	414	622	3.97	5.76	25.6	176	265
W21×57	124	346	521	44.3	66.6	84.3	127	403	606	3.26	4.54	18.6	185	278
W16×67[f2]	123	358	538	17.2	25.9	67.6	102	370	557	5.43	7.82	34.3	167	250
W12×87[f2]	122	354	533	9.51	14.3	53.1	79.8	369	554	6.68	10.9	58.1	175	263
W21×55[f2]	**120**	**340**	**511**	**32.6**	**49.1**	**77.1**	**116**	**353**	**530**	**4.10**	**5.64**	**22.3**	**158**	**238**
W14×74	120	348	524	13.5	20.2	59.6	89.6	389	585	5.50	8.54	42.4	179	269
W12×79[f2]	119	348	523	8.97	13.5	52.2	78.4	361	543	6.71	11.0	58.1	156	235
W14×68	115	336	505	12.5	18.8	57.6	86.5	374	563	5.47	8.51	42.3	157	236
W10×88	113	319	480	7.04	10.6	42.0	63.1	367	551	5.83	12.5	78.0	189	284
W18×55	111	316	475	27.7	41.6	69.9	105	361	543	3.87	5.49	23.4	174	262
W16×57	109	308	463	24.1	36.2	64.5	97.0	352	529	3.74	5.57	26.0	194	291
W21×48[f2]	**108**	**304**	**457**	**30.7**	**46.2**	**70.1**	**105**	**296**	**444**	**4.04**	**5.52**	**21.6**	**141**	**212**
W10×77	107	305	458	6.39	9.60	40.1	60.3	348	522	5.82	12.5	77.7	149	223
W21×50	**103**	**286**	**429**	**41.0**	**61.6**	**71.7**	**108**	**334**	**502**	**3.17**	**4.36**	**17.3**	**158**	**238**
W12×72[f2]	101	297	446	8.94	13.4	47.5	71.3	275	413	6.57	10.2	50.1	155	233
W18×50	98.2	281	422	24.5	36.8	63.5	95.5	318	479	3.86	5.40	22.2	135	203
W14×61[f2]	98.0	287	431	11.8	17.8	52.1	78.2	299	449	5.42	8.04	37.2	136	204
W12×65[f2]	97.1	286	430	7.96	12.0	45.8	68.9	265	398	6.62	10.2	50.2	127	191
W21×44[f2]	**93.5**	**259**	**389**	**38.7**	**58.1**	**66.0**	**99.2**	**286**	**429**	**3.13**	**4.28**	**16.8**	**141**	**212**
W18×46	91.0	257	387	29.7	44.7	62.6	94.2	295	444	3.10	4.37	18.4	136	204
W16×50	90.5	259	389	21.7	32.6	57.2	85.9	294	441	3.69	5.30	23.1	145	218
W12×58[f2]	82.8	243	366	8.69	13.1	42.2	63.4	253	380	5.49	8.42	41.1	115	173
W10×68	82.0	237	356	6.53	9.81	35.4	53.2	266	400	5.65	10.1	57.7	131	197
W14×53	81.9	237	356	13.8	20.7	47.1	70.8	266	399	4.31	6.40	29.6	136	204
W16×45	80.9	231	348	20.3	30.6	52.4	78.8	262	394	3.65	5.17	22.0	129	194
W14×48	79.9	232	349	13.0	19.6	46.2	69.4	259	390	4.32	6.40	29.6	122	183
W12×53[f2]	75.2	221	332	8.53	12.8	39.6	59.5	215	323	5.45	8.15	38.3	114	172

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Z_x

Table 7-2 (continued)
W-Shapes (Welded)
Selection by Z_x

Duplex Stainless Steel
$F_y = 65$ ksi

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W18×40[f2]	**74.7**	**211**	**317**	**27.2**	**40.9**	**53.4**	**80.3**	**241**	**362**	**3.02**	**4.18**	**16.9**	**112**	**168**
W8×67	73.1	204	306	4.65	6.99	26.8	40.3	237	356	4.76	12.0	77.1	141	212
W16×40[f2]	71.9	206	310	18.6	28.0	47.8	71.9	233	350	3.62	5.06	20.9	108	162
W12×50	69.7	202	303	10.3	15.4	38.2	57.5	226	340	4.38	6.73	33.0	128	192
W10×60[f2]	68.7	200	300	6.26	9.40	31.9	48.0	208	312	5.59	9.24	49.4	117	176
W10×54[f2]	66.6	194	292	5.95	8.94	31.1	46.8	203	305	5.56	9.18	49.1	106	160
W16×36[f2]	**66.2**	**189**	**284**	**18.5**	**27.7**	**44.6**	**67.0**	**203**	**305**	**3.57**	**4.96**	**20.1**	**107**	**161**
W14×43[f2]	65.4	190	286	12.0	18.1	40.2	60.4	199	299	4.24	6.06	26.1	101	152
W18×35[f2]	**64.8**	**181**	**272**	**27.1**	**40.7**	**47.0**	**70.7**	**203**	**306**	**2.93**	**4.02**	**15.9**	**111**	**167**
W12×45[f2]	62.6	182	273	9.84	14.8	35.7	53.6	200	301	4.34	6.49	30.5	114	172
W10×49[f2]	59.6	175	263	5.68	8.54	29.1	43.8	170	255	5.53	8.79	45.0	97.9	147
W14×38	59.5	171	257	14.6	22.0	39.1	58.7	193	290	3.54	5.03	21.5	102	154
W8×58	55.9	158	238	4.79	7.19	23.6	35.5	181	272	4.62	9.39	57.3	123	184
W10×45	54.3	158	237	6.49	9.76	27.8	41.7	176	265	4.43	7.29	38.8	99.1	149
W16×31	**54.2**	**153**	**230**	**20.9**	**31.4**	**40.1**	**60.2**	**176**	**264**	**2.79**	**3.86**	**15.6**	**89.7**	**135**
W12×40[f2]	54.2	159	239	8.34	12.5	32.2	48.5	165	248	4.35	6.35	28.5	80.5	121
W14×34[f2]	53.2	154	231	13.3	20.0	35.8	53.9	167	250	3.52	4.94	20.5	85.6	129
W12×35	49.7	143	215	11.5	17.4	32.1	48.2	161	242	3.46	5.02	22.3	97.3	146
W14×30[f2]	**45.8**	**131**	**197**	**13.0**	**19.5**	**31.5**	**47.4**	**128**	**192**	**3.44**	**4.77**	**19.3**	**84.5**	**127**
W8×48	45.3	130	196	4.52	6.80	20.9	31.5	147	221	4.52	8.24	47.7	97.7	147
W10×39[f2]	43.9	128	193	6.09	9.15	24.4	36.7	134	201	4.36	6.68	32.6	86.9	131
W16×26[f2]	**43.6**	**123**	**185**	**18.8**	**28.3**	**33.2**	**49.9**	**126**	**189**	**2.72**	**3.71**	**14.5**	**73.6**	**111**
W12×30[f2]	42.9	125	188	9.64	14.5	28.7	43.2	137	206	3.46	4.93	21.1	68.1	102
W8×40[f2]	39.2	114	171	4.13	6.20	19.0	28.6	125	188	4.49	7.79	43.5	80.9	122
W10×33[f2]	38.7	114	171	5.53	8.32	22.3	33.6	111	167	4.33	6.49	30.4	73.3	110
W14×26	38.5	109	164	15.6	23.5	29.4	44.2	125	188	2.56	3.55	14.5	71.0	107
W10×30	36.1	104	156	8.56	12.9	23.0	34.6	117	176	3.10	4.68	22.3	89.8	135
W12×26[f2]	36.0	105	158	8.60	12.9	25.1	37.7	105	158	3.42	4.77	19.5	55.0	82.7
W8×35[f2]	34.5	101	151	3.91	5.87	17.6	26.5	105	158	4.45	7.35	39.3	71.1	107
W14×22[f2]	**32.7**	**92.9**	**140**	**13.8**	**20.7**	**25.6**	**38.5**	**98.2**	**148**	**2.53**	**3.47**	**13.8**	**57.1**	**85.8**
W10×26	31.1	90.3	136	7.27	10.9	20.8	31.2	101	152	3.09	4.55	20.7	63.4	95.3
W8×31[f2]	30.7	90.1	135	3.65	5.49	16.4	24.6	87.8	132	4.42	7.03	36.0	62.8	94.3

ASD	LRFD
$\Omega_b = 1.67$ $\Omega_v = 1.67$	$\phi_b = 0.90$ $\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Duplex
Stainless Steel

$F_y = 65$ ksi

Table 7-2 (continued)
W-Shapes (Welded)
Selection by Z_x

Z_x

Shape	Z_x	M_{yx}/Ω_b	$\phi_b M_{yx}$	BF_1/Ω_b	$\phi_b BF_1$	BF_2/Ω_b	$\phi_b BF_2$	M_{FLB}/Ω_b	$\phi_b M_{FLB}$	L_p	L_y	L_r	V_{nx}/Ω_v	$\phi_v V_{nx}$
		kip-ft	kip-ft	kips	kips	kip-ft$^{0.6}$	kip-ft$^{0.6}$	kip-ft	kip-ft				kips	kips
	in.^{3}	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ft	ft	ft	ASD	LRFD
W12×22	**27.9**	**78.2**	**118**	**14.6**	**22.0**	**22.6**	**33.9**	**90.4**	**136**	**2.04**	**2.87**	**12.0**	**67.8**	**102**
W8×28[f2]	26.0	75.6	114	4.15	6.24	15.0	22.5	82.8	124	3.59	5.69	29.0	63.2	95.1
W10×22[f2]	25.5	73.5	110	7.20	10.8	17.9	26.9	75.9	114	3.01	4.27	18.2	62.4	93.8
W12×19	**23.9**	**67.2**	**101**	**13.2**	**19.9**	**20.0**	**30.0**	**77.5**	**117**	**2.01**	**2.79**	**11.3**	**54.9**	**82.5**
W8×24[f2]	23.2	67.8	102	3.84	5.77	13.9	20.9	71.0	107	3.56	5.49	27.0	55.6	83.5
W10×19	21.6	61.2	92.0	9.58	14.4	16.8	25.2	70.2	105	2.08	3.02	13.4	62.8	94.5
W8×21	20.5	59.2	89.0	4.83	7.26	13.5	20.3	66.4	99.9	2.84	4.33	20.9	57.1	85.9
W12×16[f2]	**19.0**	**52.3**	**78.6**	**13.3**	**19.9**	**16.2**	**24.4**	**56.0**	**84.2**	**1.90**	**2.61**	**10.3**	**54.0**	**81.1**
W6×25	18.6	53.4	80.2	2.59	3.90	9.80	14.7	60.2	90.5	3.38	6.03	34.4	55.9	84.0
W10×17	17.9	50.0	75.2	9.72	14.6	14.5	21.8	58.0	87.2	2.00	2.83	11.9	61.9	93.0
W12×14[f2]	**17.4**	**47.5**	**71.4**	**13.3**	**19.9**	**15.0**	**22.5**	**46.4**	**69.8**	**1.86**	**2.53**	**9.91**	**53.6**	**80.6**
W8×18[f2]	16.4	47.2	70.9	4.76	7.15	11.5	17.3	48.1	72.3	2.76	4.02	18.0	56.0	84.1
W10×15[f2]	15.4	42.4	63.7	9.72	14.6	12.6	19.0	45.3	68.1	1.94	2.70	11.1	61.2	92.0
W6×20[f2]	15.0	43.7	65.6	2.34	3.52	8.62	13.0	45.5	68.4	3.33	5.47	29.1	43.4	65.3
W8×15	13.3	37.6	56.5	5.85	8.79	10.2	15.4	43.2	64.9	2.07	3.02	13.6	55.9	84.0
W10×12[f2]	**12.4**	**34.9**	**52.4**	**7.30**	**11.0**	**10.7**	**16.1**	**34.0**	**51.1**	**1.96**	**2.68**	**10.6**	**35.7**	**53.6**
W6×16	11.6	33.0	49.5	2.97	4.46	7.48	11.2	37.5	56.4	2.20	3.73	20.5	44.0	66.1
W8×13[f2]	11.2	31.4	47.2	5.79	8.71	8.90	13.4	33.4	50.2	2.00	2.87	12.5	55.0	82.7
W5×19	11.1	31.6	47.6	1.65	2.49	5.93	8.91	36.0	54.1	2.82	5.43	32.4	40.4	60.7
W6×15[f2]	10.3	30.0	45.1	2.08	3.12	6.71	10.1	24.1	36.3	3.23	4.79	22.2	36.9	55.5
W5×16[f2]	9.32	26.8	40.3	1.57	2.37	5.33	8.02	29.9	44.9	2.78	4.94	28.2	35.1	52.8
W8×10[f2]	**9.13**	**26.0**	**39.1**	**4.53**	**6.80**	**7.69**	**11.6**	**25.4**	**38.2**	**2.01**	**2.80**	**11.4**	**32.7**	**49.1**
W6×12[f2]	8.09	23.2	34.8	2.77	4.17	5.94	8.92	25.9	38.9	2.12	3.23	15.6	37.2	55.9
W6×9[f2]	**6.25**	**18.0**	**27.1**	**2.41**	**3.63**	**4.97**	**7.47**	**17.6**	**26.4**	**2.07**	**3.00**	**13.3**	**28.6**	**43.1**
W4×13	6.25	17.6	26.5	1.10	1.66	3.47	5.21	20.3	30.5	2.27	4.66	28.6	32.6	49.1

ASD	LRFD
$\Omega_b = 1.67$ $\Omega_v = 1.67$	$\phi_b = 0.90$ $\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Z_y

Table 7-3
W-Shapes (Welded)
Selection by Z_y

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$	Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$	Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$
		kip-ft	kip-ft			kip-ft	kip-ft			kip-ft	kip-ft
	in.^{3}	ASD	LRFD		in.^{3}	ASD	LRFD		in.^{3}	ASD	LRFD
W14×132	**109**	**164**	**246**	**W12×65**	**45.4**	**67.9**	**102**	**W8×40**	**18.5**	**27.6**	**41.5**
W14×120	109	164	246	W24×94	42.5	63.7	95.7	W18×55	18.4	27.6	41.5
				W16×77	40.5	60.7	91.2	W21×55	17.6	26.3	39.6
W14×109	**107**	**161**	**242**	W14×74	38.9	58.2	87.5	W24×62	16.6	24.9	37.4
W24×131	85.4	128	192	W10×68	38.7	57.9	87.1				
W24×146	85.4	128	192	W18×76	38.5	57.7	86.7	**W12×40**	**16.4**	**24.6**	**36.9**
				W14×68	38.0	56.9	85.6	W14×43	16.3	24.4	36.7
W14×99	**80.7**	**121**	**182**	W21×93	37.0	55.4	83.2	W18×50	16.3	24.4	36.6
				W8×67	34.8	52.1	78.4				
W14×90	**79.5**	**119**	**179**	W16×67	33.1	49.6	74.6	**W8×35**	**16.3**	**24.3**	**36.6**
W21×122	78.8	118	177					W10×39	16.2	24.2	36.4
W21×111	77.2	116	174	**W10×60**	**32.3**	**48.3**	**72.6**	W16×50	16.1	24.2	36.3
W12×106	75.5	113	170	W14×61	31.7	47.4	71.3	W21×48	15.5	23.2	34.9
W12×96	75.3	113	169	W24×84	31.7	47.4	71.2				
W18×106	64.4	96.3	145	W12×58	31.6	47.3	71.1	**W8×31**	**14.5**	**21.8**	**32.7**
W24×117	63.2	94.7	142					W10×33	14.4	21.6	32.5
W24×104	62.9	94.1	141	**W10×54**	**31.6**	**47.2**	**71.0**	W21×57	14.3	21.4	32.1
W18×97	62.9	94.2	142	W24×76	31.4	47.1	70.7	W16×45	14.3	21.5	32.3
W21×101	58.0	86.8	130					W24×55	13.2	19.8	29.8
				W12×53	**28.3**	**42.4**	**63.8**	W16×40	12.6	18.9	28.4
W12×87	**55.6**	**83.2**	**125**					W18×46	12.0	18.0	27.0
				W10×49	**28.3**	**42.3**	**63.6**	W14×38	11.8	17.6	26.5
W12×79	**55.5**	**83.0**	**125**	W21×83	27.3	40.9	61.5	W21×50	11.4	17.0	25.6
W16×100	55.3	82.7	124	W21×73	26.8	40.2	60.4	W16×36	11.4	17.0	25.6
W16×89	55.0	82.3	124	W8×58	25.8	38.6	58.0	W12×35	11.0	16.5	24.8
W10×88	53.9	80.7	121	W24×68	23.5	35.1	52.8	W14×34	10.5	15.7	23.6
W10×77	52.6	78.7	118	W18×71	23.0	34.4	51.6	W21×44	10.1	15.1	22.8
W14×82	51.8	77.5	116	W18×65	22.5	33.6	50.5				
W18×86	47.3	70.7	106	W21×68	22.4	33.5	50.3	**W8×28**	**9.76**	**14.6**	**22.0**
				W18×60	22.1	33.1	49.8	W12×30	9.74	14.6	21.9
W12×72	**45.6**	**68.2**	**103**	W21×62	22.0	33.0	49.6	W18×40	9.47	14.2	21.3
				W8×48	**20.9**	**31.2**	**46.9**	**W8×24**	**8.77**	**13.1**	**19.7**
				W12×50	20.8	31.1	46.8	W14×30	8.75	13.1	19.7
				W14×53	20.7	31.1	46.7	W10×30	8.67	13.0	19.5
				W14×48	20.5	30.7	46.2	W6×25	8.45	12.7	19.0
				W10×45	20.4	30.5	45.8	W12×26	8.04	12.0	18.1
				W16×57	19.8	29.6	44.5	W18×35	7.79	11.7	17.5
				W12×45	18.5	27.7	41.6	W10×26	7.64	11.4	17.2
								W16×31	7.17	10.7	16.1

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-3 (continued)
W-Shapes (Welded)
Selection by Z_y

Z_y

Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$
		kip-ft	kip-ft
	in.^{3}	ASD	LRFD
W6×20	**6.88**	**10.3**	**15.5**
W10×22	5.93	8.88	13.4
W8×21	5.81	8.70	13.1
W16×26	5.53	8.28	12.4
W14×26	5.39	8.07	12.1
W5×19	**5.27**	**7.89**	**11.9**
W6×15[f1]	**4.55**	**5.00**	**7.51**
W14×22	4.53	6.78	10.2
W5×16	4.44	6.65	10.0
W8×18	4.43	6.63	9.97
W12×22	3.51	5.25	7.89
W10×19	3.46	5.18	7.78
W6×16	3.41	5.11	7.68
W12×19	2.95	4.42	6.64
W4×13	2.95	4.42	6.64
W10×17	2.66	3.99	6.00
W8×15	2.65	3.96	5.95
W6×12	**2.31**	**3.45**	**5.19**
W10×15	2.15	3.22	4.83
W12×16	2.13	3.19	4.79
W8×13	2.12	3.17	4.76
W12×14	1.87	2.80	4.21
W10×12	1.80	2.69	4.05
W8×10	**1.77**	**2.65**	**3.98**
W6×9	**1.75**	**2.62**	**3.94**

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f1] Shape exceeds compact limit for flexure with $F_y = 30$ ksi; tabulated values have been adjusted accordingly.

Z_y

Table 7-4
W-Shapes (Welded)
Selection by Z_y

Duplex Stainless Steel

$F_y = 65$ ksi

Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$	Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$	Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$
		kip-ft	kip-ft			kip-ft	kip-ft			kip-ft	kip-ft
	in.^{3}	ASD	LRFD		in.^{3}	ASD	LRFD		in.^{3}	ASD	LRFD
W14×132[f2]	**109**	**326**	**490**	**W12×65**[f2]	**45.4**	**81.9**	**123**	**W8×40**[f2]	**18.5**	**57.0**	**85.7**
W14×120[f2]	109	327	492	W24×94	42.5	138	207	W18×55	18.4	59.8	89.8
				W16×77	40.5	132	198	W21×55[f2]	17.6	41.9	63.0
W14×109[f2]	**107**	**325**	**489**	W14×74	38.9	126	190	W24×62	16.6	53.9	81.0
W24×131	85.4	277	416	W10×68	38.7	126	189				
W24×146	85.4	277	416	W18×76[f2]	38.5	78.5	118	**W12×40**[f2]	**16.4**	**41.6**	**62.5**
				W14×68	38.0	123	185	W14×43[f2]	16.3	41.8	62.8
W14×99[f2]	**80.7**	**143**	**214**	W21×93	37.0	120	180	W18×50	16.3	52.8	79.3
				W8×67	34.8	113	170				
W14×90[f2]	**79.5**	**142**	**213**	W16×67[f2]	33.1	81.4	122	**W8×35**[f2]	**16.3**	**41.6**	**62.5**
W21×122	78.8	256	384					W10×39[f2]	16.2	41.6	62.6
W21×111	77.2	250	376	**W10×60**[f2]	**32.3**	**81.2**	**122**	W16×50	16.1	52.4	78.7
W12×106	75.5	245	368	W14×61[f2]	31.7	81.4	122	W21×48[f2]	15.5	29.9	44.9
W12×96	75.3	244	367	W24×84	31.7	103	154				
W18×106	64.4	209	314	W12×58[f2]	31.6	81.2	122	**W8×31**[f2]	**14.5**	**29.4**	**44.2**
W24×117[f2]	63.2	138	208					W10×33[f2]	14.4	29.3	44.1
W24×104[f2]	62.9	138	208	**W10×54**[f2]	**31.6**	**81.2**	**122**	W21×57	14.3	46.3	69.6
W18×97	62.9	204	307	W24×76	31.4	102	153	W16×45	14.3	46.5	69.9
W21×101[f2]	58.0	141	211					W24×55[f2]	13.2	42.5	63.9
				W12×53[f2]	**28.3**	**56.8**	**85.4**	W16×40[f2]	12.6	40.7	61.1
W12×87[f2]	**55.6**	**140**	**211**					W18×46	12.0	38.9	58.5
				W10×49[f2]	**28.3**	**56.8**	**85.3**	W14×38	11.8	38.2	57.4
W12×79[f2]	**55.5**	**140**	**211**	W21×83	27.3	88.6	133	W21×50	11.4	36.8	55.4
W16×100	55.3	179	269	W21×73	26.8	87.0	131	W16×36[f2]	11.4	30.7	46.1
W16×89	55.0	178	268	W8×58	25.8	83.7	126	W12×35	11.0	35.8	53.8
W10×88	53.9	175	263	W24×68[f2]	23.5	59.3	89.2	W14×34[f2]	10.5	30.4	45.6
W10×77	52.6	170	256	W18×71	23.0	74.4	112	W21×44[f2]	10.1	31.0	46.6
W14×82	51.8	168	252	W18×65	22.5	72.8	109				
W18×86[f2]	47.3	140	210	W21×68	22.4	72.6	109	**W8×28**[f2]	**9.76**	**29.8**	**44.7**
				W18×60	22.1	71.8	108	W12×30[f2]	9.74	29.8	44.8
W12×72[f2]	**45.6**	**82.1**	**123**	W21×62	22.0	71.5	107	W18×40	9.47	30.7	46.2
				W8×48	**20.9**	**67.7**	**102**	**W8×24**[f2]	**8.77**	**23.0**	**34.5**
				W12×50	20.8	67.4	101	W14×30[f2]	8.75	17.2	25.8
				W14×53	20.7	67.3	101	W10×30	8.67	28.1	42.3
				W14×48	20.5	66.6	100	W6×25	8.45	27.4	41.2
				W10×45	20.4	66.1	99.3	W12×26[f2]	8.04	17.1	25.7
				W16×57	19.8	64.1	96.4	W18×35[f2]	7.79	23.4	35.1
				W12×45[f2]	18.5	57.3	86.1	W10×26	7.64	24.8	37.2
								W16×31	7.17	23.3	35.0

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-4 (continued)
W-Shapes (Welded)
Selection by Z_y

Z_y

Shape	Z_y	M_{ny}/Ω_b	$\phi_b M_{ny}$
		kip-ft	kip-ft
	in.^{3}	ASD	LRFD
W6×20[f2]	**6.88**	**17.6**	**26.4**
W10×22[f2]	5.93	14.3	21.5
W8×21	5.81	18.8	28.3
W16×26[f2]	5.53	14.5	21.9
W14×26	5.39	17.5	26.3
W5×19	**5.27**	**17.1**	**25.7**
W6×15[f2]	**4.55**	**6.12**	**9.20**
W14×22[f2]	4.53	14.2	21.3
W5×16[f2]	4.44	13.9	20.9
W8×18[f2]	4.43	10.1	15.2
W12×22	3.51	11.4	17.1
W10×19	3.46	11.2	16.9
W6×16	3.41	11.1	16.6
W12×19	2.95	9.58	14.4
W4×13	2.95	9.58	14.4
W10×17	2.66	8.64	13.0
W8×15	2.65	8.58	12.9
W6×12[f2]	**2.31**	**7.21**	**10.8**
W10×15[f2]	2.15	5.37	8.07
W12×16[f2]	2.13	5.36	8.06
W8×13[f2]	2.12	5.33	8.01
W12×14[f2]	1.87	3.50	5.27
W10×12[f2]	1.80	3.48	5.23
W8×10[f2]	**1.77**	**3.47**	**5.21**
W6×9[f2]	**1.75**	**3.46**	**5.20**

ASD	LRFD
$\Omega_b = 1.67$ $\Omega_v = 1.67$	$\phi_b = 0.90$ $\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Table 7-5
Maximum Total Uniform Load, kips
W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W24×											
		146		131		117		104		94		84	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	10					352	529			305	458	257	386
	11	400	601	396	595	325	489	300	452	298	448	235	353
	12	385	579	381	573	298	448	287	432	273	410	215	323
	13	356	535	352	529	275	414	265	399	252	379	198	298
	14	330	497	327	491	256	384	246	370	234	352	184	277
	15	308	463	305	459	239	359	230	346	218	328	172	259
	16	289	435	286	430	224	336	216	324	205	308	161	242
	17	272	409	269	405	211	316	203	305	193	290	152	228
	18	257	386	254	382	199	299	192	288	182	273	143	215
	19	243	366	241	362	188	283	182	273	172	259	136	204
	20	231	348	229	344	179	269	172	259	164	246	129	194
	21	220	331	218	328	170	256	164	247	156	234	123	185
	22	210	316	208	313	163	245	157	236	149	224	117	176
	23	201	302	199	299	156	234	150	225	142	214	112	169
	24	193	290	191	287	149	224	144	216	136	205	107	162
	25	185	278	183	275	143	215	138	207	131	197	103	155
	26	178	267	176	265	138	207	133	199	126	189	99.2	149
	27	171	257	170	255	133	199	128	192	121	182	95.6	144
	28	165	248	163	246	128	192	123	185	117	176	92.1	138
	29	160	240	158	237	123	185	119	179	113	170	89.0	134
	30	154	232	153	229	119	179	115	173	109	164	86.0	129
	32	145	217	143	215	112	168	108	162	102	154	80.6	121
	34	136	204	135	202	105	158	101	152	96.3	145	75.9	114
	36	128	193	127	191	99.4	149	95.8	144	91.0	137	71.7	108
	38	122	183	120	181	94.2	142	90.8	136	86.2	130	67.9	102
	40	116	174	114	172	89.5	134	86.2	130	81.9	123	64.5	96.9
	42	110	166	109	164	85.2	128	82.1	123	78.0	117	61.4	92.3
	44	105	158	104	156	81.3	122	78.4	118	74.4	112	58.6	88.1
	46	101	151	99.5	150	77.8	117	75.0	113	71.2	107	56.1	84.3
	48	96.4	145	95.4	143	74.6	112	71.9	108	68.2	103	53.7	80.8
	50	92.5	139	91.6	138	71.6	108	69.0	104	65.5	98.5	51.6	77.6
	52	89.0	134	88.0	132	68.8	103	66.3	99.7	63.0	94.7	49.6	74.6
	54	85.7	129	84.8	127	66.3	99.6	63.9	96.0	60.7	91.2	47.8	71.8
	56	82.6	124	81.7	123	63.9	96.1	61.6	92.6	58.5	87.9	46.1	69.2
	58	79.8	120	78.9	119	61.7	92.7	59.5	89.4	56.5	84.9	44.5	66.9
	60	77.1	116	76.3	115	59.7	89.7	57.5	86.4	54.6	82.0	43.0	64.6
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	4630	6950	4580	6880	3580	5380	3450	5180	3280	4920	2580	3880
M_y/Ω_b	$\phi_b M_y$, kip-ft	512	770	508	764	396	596	385	579	360	542	283	425
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	578	869	572	860	447	672	431	648	409	615	322	485
BF_1/Ω_b	$\phi_b BF_1$, kips	15.8	23.7	15.3	22.9	15.6	23.4	14.2	21.3	17.3	26.0	17.9	26.9
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	67.1	101	66.3	99.7	56.5	85.0	55.1	82.8	55.0	82.7	47.2	71.0
V_n/Ω_v	$\phi_v V_{nx}$, kips	200	301	198	298	176	265	150	226	152	229	128	193
Z_x, in.^{3}		386		382		299		288		273		215	
L_p, ft		8.07		8.07		7.83		7.91		5.63		5.46	
L_y, ft		12.2		12.3		11.1		11.2		8.45		7.67	
L_r, ft		78.3		78.8		64.5		64.1		53.5		43.7	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

W24–W21

Shape		W24×								W21×			
		76		68		62		55		122		111	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7					253	381	218	328				
	8					237	356	200	300				
	9	256	384	219	330	211	316	177	267				
	10	255	383	202	303	189	285	160	240	351	527		
	11	231	348	183	276	172	259	145	218	345	519	311	468
	12	212	319	168	253	158	237	133	200	317	476	305	458
	13	196	294	155	233	146	219	123	185	292	439	281	423
	14	182	273	144	217	135	203	114	171	271	408	261	393
	15	170	255	135	202	126	190	106	160	253	381	244	366
	16	159	239	126	190	118	178	99.8	150	238	357	229	344
	17	150	225	119	178	111	168	93.9	141	224	336	215	323
	18	141	213	112	168	105	158	88.7	133	211	317	203	305
	19	134	201	106	160	99.7	150	84.0	126	200	301	192	289
	20	127	191	101	152	94.7	142	79.8	120	190	286	183	275
	21	121	182	96.1	144	90.2	136	76.0	114	181	272	174	262
	22	116	174	91.7	138	86.1	129	72.6	109	173	260	166	250
	23	111	166	87.7	132	82.4	124	69.4	104	165	248	159	239
	24	106	159	84.1	126	79.0	119	66.5	100	158	238	152	229
	25	102	153	80.7	121	75.8	114	63.9	96.0	152	228	146	220
	26	97.9	147	77.6	117	72.9	110	61.4	92.3	146	220	141	211
	27	94.3	142	74.7	112	70.2	105	59.1	88.9	141	212	135	204
	28	90.9	137	72.1	108	67.7	102	57.0	85.7	136	204	131	196
	29	87.8	132	69.6	105	65.3	98.2	55.1	82.7	131	197	126	190
	30	84.8	128	67.3	101	63.2	94.9	53.2	80.0	127	190	122	183
	32	79.5	120	63.1	94.8	59.2	89.0	49.9	75.0	119	178	114	172
	34	74.9	113	59.4	89.2	55.7	83.8	47.0	70.6	112	168	108	162
	36	70.7	106	56.1	84.2	52.6	79.1	44.4	66.7	106	159	102	153
	38	67.0	101	53.1	79.8	49.9	75.0	42.0	63.2	100	150	96.2	145
	40	63.6	95.6	50.4	75.8	47.4	71.2	39.9	60.0	95.0	143	91.4	137
	42	60.6	91.1	48.0	72.2	45.1	67.8	38.0	57.1	90.5	136	87.1	131
	44	57.8	86.9	45.9	68.9	43.1	64.7	36.3	54.5	86.4	130	83.1	125
	46	55.3	83.2	43.9	65.9	41.2	61.9	34.7	52.2	82.6	124	79.5	119
	48	53.0	79.7	42.0	63.2	39.5	59.3	33.3	50.0	79.2	119	76.2	115
	50	50.9	76.5	40.4	60.7	37.9	57.0	31.9	48.0	76.0	114	73.1	110
	52	48.9	73.6	38.8	58.3	36.4	54.8	30.7	46.1	73.1	110	70.3	106
	54	47.1	70.8	37.4	56.2	35.1	52.7	29.6	44.4	70.4	106	67.7	102
	56	45.5	68.3	36.0	54.2	33.8	50.9	28.5	42.9	67.9	102	65.3	98.2
	58	43.9	66.0	34.8	52.3	32.7	49.1	27.5	41.4	65.5	98.5	63.1	94.8
	60	42.4	63.8	33.6	50.5	31.6	47.5	26.6	40.0	63.3	95.2	61.0	91.6
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2550	3830	2020	3030	1890	2850	1600	2400	3800	5710	3660	5500
M_y/Ω_b	$\phi_b M_y$, kip-ft	279	420	220	330	202	303	169	254	422	634	408	614
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	318	478	252	379	237	356	200	300	475	714	457	687
BF_1/Ω_b	$\phi_b BF_1$, kips	17.6	26.4	17.5	26.2	23.0	34.6	22.6	34.0	11.3	17.0	10.5	15.8
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	46.5	70.0	39.0	58.7	38.9	58.4	34.0	51.1	53.2	80.0	51.7	77.8
V_n/Ω_v	$\phi_v V_{nx}$, kips	128	192	110	165	127	190	109	164	175	264	156	234
Z_x, in.^{3}		213		168		158		133		317		305	
L_p, ft		5.44		5.29		4.05		3.94		7.83		7.83	
L_y, ft		7.66		7.15		5.58		5.30		12.5		12.5	
L_r, ft		43.8		38.0		30.7		27.8		85.0		84.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W21

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W21×											
		101		93		83		73		68		62	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7					277	416			239	360		
	8			313	470	268	403	241	363	225	338	208	313
	9			302	454	238	358	227	342	200	300	193	290
	10	277	416	272	409	214	322	205	308	180	270	174	261
	11	261	393	247	372	195	293	186	280	163	246	158	237
	12	240	360	227	341	179	268	171	256	150	225	145	217
	13	221	332	209	315	165	248	157	237	138	208	133	201
	14	205	309	194	292	153	230	146	220	128	193	124	186
	15	192	288	181	273	143	215	136	205	120	180	116	174
	16	180	270	170	256	134	201	128	192	112	169	108	163
	17	169	254	160	241	126	190	120	181	106	159	102	153
	18	160	240	151	227	119	179	114	171	99.9	150	96.4	145
	19	151	227	143	215	113	170	108	162	94.6	142	91.3	137
	20	144	216	136	205	107	161	102	154	89.9	135	86.8	130
	21	137	206	130	195	102	153	97.5	147	85.6	129	82.6	124
	22	131	196	124	186	97.4	146	93.1	140	81.7	123	78.9	119
	23	125	188	118	178	93.2	140	89.0	134	78.2	118	75.5	113
	24	120	180	113	170	89.3	134	85.3	128	74.9	113	72.3	109
	25	115	173	109	164	85.7	129	81.9	123	71.9	108	69.4	104
	26	111	166	105	157	82.4	124	78.7	118	69.2	104	66.7	100
	27	106	160	101	151	79.4	119	75.8	114	66.6	100	64.3	96.6
	28	103	154	97.2	146	76.6	115	73.1	110	64.2	96.5	62.0	93.2
	29	99.1	149	93.8	141	73.9	111	70.6	106	62.0	93.2	59.8	89.9
	30	95.8	144	90.7	136	71.4	107	68.2	103	59.9	90.1	57.8	86.9
	32	89.8	135	85.0	128	67.0	101	64.0	96.2	56.2	84.5	54.2	81.5
	34	84.5	127	80.0	120	63.0	94.8	60.2	90.5	52.9	79.5	51.0	76.7
	36	79.8	120	75.6	114	59.5	89.5	56.9	85.5	50.0	75.1	48.2	72.5
	38	75.6	114	71.6	108	56.4	84.8	53.9	81.0	47.3	71.1	45.7	68.6
	40	71.9	108	68.0	102	53.6	80.5	51.2	76.9	45.0	67.6	43.4	65.2
	42	68.4	103	64.8	97.4	51.0	76.7	48.7	73.3	42.8	64.4	41.3	62.1
	44	65.3	98.2	61.8	93.0	48.7	73.2	46.5	69.9	40.9	61.4	39.4	59.3
	46	62.5	93.9	59.2	88.9	46.6	70.0	44.5	66.9	39.1	58.8	37.7	56.7
	48	59.9	90.0	56.7	85.2	44.7	67.1	42.7	64.1	37.5	56.3	36.2	54.3
	50	57.5	86.4	54.4	81.8	42.9	64.4	40.9	61.5	36.0	54.1	34.7	52.2
	52	55.3	83.1	52.3	78.7	41.2	62.0	39.4	59.2	34.6	52.0	33.4	50.2
	54	53.2	80.0	50.4	75.7	39.7	59.7	37.9	57.0	33.3	50.1	32.1	48.3
	56	51.3	77.1	48.6	73.0	38.3	57.5	36.6	55.0	32.1	48.3	31.0	46.6
	58	49.6	74.5	46.9	70.5	37.0	55.5	35.3	53.1	31.0	46.6	29.9	45.0
	60	47.9	72.0	45.4	68.2	35.7	53.7	34.1	51.3	30.0	45.0	28.9	43.5
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2870	4320	2720	4090	2140	3220	2050	3080	1800	2700	1740	2610
M_y/Ω_b	$\phi_b M_y$, kip-ft	321	483	297	446	233	350	224	337	195	294	190	286
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	359	540	340	511	268	403	256	385	225	338	217	326
BF_1/Ω_b	$\phi_b BF_1$, kips	10.9	16.4	14.2	21.4	15.1	22.7	13.9	20.8	14.7	22.1	13.6	20.5
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	44.9	67.5	44.3	66.6	38.4	57.7	37.2	55.9	33.9	51.0	33.1	49.8
V_n/Ω_v	$\phi_v V_{nx}$, kips	138	208	156	235	138	208	121	181	120	180	104	156
Z_x, in.^{3}		240		227		179		171		150		145	
L_p, ft		7.67		5.22		5.05		5.06		4.93		4.96	
L_y, ft		11.1		8.28		7.36		7.34		6.93		6.94	
L_r, ft		67.3		55.7		44.5		44.1		39.6		39.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

W21–W18

Shape		W21×										W18×	
		57		55		50		48		44		106	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6					180	271			161	242		
	7	209	314	180	271	176	265			160	241		
	8	186	280	180	270	154	232	161	242	140	210		
	9	165	249	160	240	137	206	143	216	124	187	302	454
	10	149	224	144	216	123	185	129	194	112	168	290	435
	11	135	203	131	197	112	169	117	176	102	153	263	396
	12	124	187	120	180	103	155	108	162	93.3	140	241	363
	13	115	172	111	166	94.9	143	99.3	149	86.2	130	223	335
	14	106	160	103	155	88.1	132	92.2	139	80.0	120	207	311
	15	99.3	149	96.0	144	82.3	124	86.0	129	74.7	112	193	290
	16	93.1	140	90.0	135	77.1	116	80.7	121	70.0	105	181	272
	17	87.6	132	84.7	127	72.6	109	75.9	114	65.9	99.0	170	256
	18	82.7	124	80.0	120	68.6	103	71.7	108	62.2	93.5	161	242
	19	78.4	118	75.8	114	64.9	97.6	67.9	102	59.0	88.6	152	229
	20	74.5	112	72.0	108	61.7	92.7	64.5	97.0	56.0	84.2	145	218
	21	70.9	107	68.5	103	58.8	88.3	61.5	92.4	53.3	80.2	138	207
	22	67.7	102	65.4	98.3	56.1	84.3	58.7	88.2	50.9	76.5	132	198
	23	64.7	97.3	62.6	94.1	53.6	80.6	56.1	84.3	48.7	73.2	126	189
	24	62.0	93.3	60.0	90.1	51.4	77.3	53.8	80.8	46.7	70.2	121	181
	25	59.6	89.5	57.6	86.5	49.4	74.2	51.6	77.6	44.8	67.3	116	174
	26	57.3	86.1	55.4	83.2	47.5	71.3	49.6	74.6	43.1	64.8	111	167
	27	55.1	82.9	53.3	80.1	45.7	68.7	47.8	71.8	41.5	62.4	107	161
	28	53.2	79.9	51.4	77.3	44.1	66.2	46.1	69.3	40.0	60.1	103	155
	29	51.3	77.2	49.6	74.6	42.5	64.0	44.5	66.9	38.6	58.1	99.9	150
	30	49.6	74.6	48.0	72.1	41.1	61.8	43.0	64.7	37.3	56.1	96.5	145
	32	46.5	69.9	45.0	67.6	38.6	58.0	40.3	60.6	35.0	52.6	90.5	136
	34	43.8	65.8	42.3	63.6	36.3	54.5	38.0	57.1	32.9	49.5	85.2	128
	36	41.4	62.2	40.0	60.1	34.3	51.5	35.9	53.9	31.1	46.8	80.4	121
	38	39.2	58.9	37.9	56.9	32.5	48.8	34.0	51.0	29.5	44.3	76.2	115
	40	37.2	56.0	36.0	54.1	30.8	46.4	32.3	48.5	28.0	42.1	72.4	109
	42	35.5	53.3	34.3	51.5	29.4	44.2	30.7	46.2	26.7	40.1	69.0	104
	44	33.8	50.9	32.7	49.2	28.0	42.1	29.3	44.1	25.5	38.3	65.8	98.9
	46	32.4	48.7	31.3	47.0	26.8	40.3	28.1	42.2	24.4	36.6	63.0	94.6
	48	31.0	46.6	30.0	45.1	25.7	38.6	26.9	40.4	23.3	35.1	60.3	90.7
	50	29.8	44.8	28.8	43.3	24.7	37.1	25.8	38.8	22.4	33.7	57.9	87.1
	52	28.6	43.0	27.7	41.6	23.7	35.7	24.8	37.3	21.5	32.4	55.7	83.7
	54	27.6	41.4	26.7	40.1	22.9	34.3	23.9	35.9	20.7	31.2	53.6	80.6
	56	26.6	40.0	25.7	38.6	22.0	33.1	23.0	34.6	20.0	30.1	51.7	77.7
	58	25.7	38.6	24.8	37.3	21.3	32.0	22.3	33.4	19.3	29.0	49.9	75.0
	60	24.8	37.3	24.0	36.1	20.6	30.9	21.5	32.3	18.7	28.1	48.3	72.5
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1490	2240	1440	2160	1230	1850	1290	1940	1120	1680	2900	4350
M_y/Ω_b	$\phi_b M_y$, kip-ft	160	240	157	236	132	198	140	211	120	180	320	481
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	186	280	180	270	154	232	161	242	140	210	362	544
BF_1/Ω_b	$\phi_b BF_1$, kips	17.1	25.7	13.3	19.9	16.6	24.9	12.8	19.2	16.0	24.1	8.04	12.1
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	30.8	46.4	28.7	43.1	26.6	40.0	26.2	39.4	24.7	37.1	39.5	59.3
V_n/Ω_v	$\phi_v V_{nx}$, kips	104	157	90.0	135	90.0	135	80.5	121	80.6	121	151	227
Z_x, in.^{3}		124		120		103		108		93.5		242	
L_p, ft		3.85		4.86		3.75		4.78		3.71		7.14	
L_y, ft		5.39		6.60		5.11		6.42		4.99		12.4	
L_r, ft		30.5		35.2		27.4		33.6		26.1		89.1	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W18

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W18×											
		97		86		76		71		65		60	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6							239	360				
	7							236	354	214	322	193	290
	8							206	310	199	298	191	287
	9			238	358	193	290	183	276	176	265	170	255
	10	269	405	219	329	180	270	165	248	159	239	153	230
	11	255	383	199	299	164	246	150	226	144	217	139	209
	12	233	351	182	274	150	225	138	207	132	199	127	191
	13	216	324	168	253	138	208	127	191	122	184	117	177
	14	200	301	156	235	129	193	118	177	113	170	109	164
	15	187	281	146	219	120	180	110	165	106	159	102	153
	16	175	263	137	205	112	169	103	155	99.3	149	95.5	143
	17	165	248	129	193	106	159	97.1	146	93.4	140	89.8	135
	18	156	234	122	183	100	150	91.7	138	88.2	133	84.8	128
	19	147	222	115	173	94.7	142	86.9	131	83.6	126	80.4	121
	20	140	211	109	164	90.0	135	82.5	124	79.4	119	76.4	115
	21	133	201	104	157	85.7	129	78.6	118	75.6	114	72.7	109
	22	127	191	99.4	149	81.8	123	75.0	113	72.2	108	69.4	104
	23	122	183	95.1	143	78.2	118	71.8	108	69.0	104	66.4	99.8
	24	117	175	91.1	137	75.0	113	68.8	103	66.2	99.5	63.6	95.6
	25	112	168	87.5	131	72.0	108	66.0	99.2	63.5	95.5	61.1	91.8
	26	108	162	84.1	126	69.2	104	63.5	95.4	61.1	91.8	58.7	88.3
	27	104	156	81.0	122	66.7	100	61.1	91.9	58.8	88.4	56.6	85.0
	28	100	150	78.1	117	64.3	96.6	59.0	88.6	56.7	85.2	54.5	82.0
	29	96.6	145	75.4	113	62.1	93.3	56.9	85.6	54.8	82.3	52.7	79.2
	30	93.4	140	72.9	110	60.0	90.2	55.0	82.7	52.9	79.6	50.9	76.5
	32	87.6	132	68.4	103	56.2	84.5	51.6	77.5	49.6	74.6	47.7	71.7
	34	82.4	124	64.3	96.7	52.9	79.6	48.5	73.0	46.7	70.2	44.9	67.5
	36	77.8	117	60.8	91.3	50.0	75.1	45.9	68.9	44.1	66.3	42.4	63.8
	38	73.7	111	57.6	86.5	47.4	71.2	43.4	65.3	41.8	62.8	40.2	60.4
	40	70.0	105	54.7	82.2	45.0	67.6	41.3	62.0	39.7	59.7	38.2	57.4
	42	66.7	100	52.1	78.3	42.9	64.4	39.3	59.1	37.8	56.8	36.4	54.7
	44	63.7	95.7	49.7	74.7	40.9	61.5	37.5	56.4	36.1	54.2	34.7	52.2
	46	60.9	91.5	47.5	71.5	39.1	58.8	35.9	53.9	34.5	51.9	33.2	49.9
	48	58.4	87.7	45.6	68.5	37.5	56.4	34.4	51.7	33.1	49.7	31.8	47.8
	50	56.0	84.2	43.7	65.7	36.0	54.1	33.0	49.6	31.8	47.7	30.5	45.9
	52	53.9	81.0	42.1	63.2	34.6	52.0	31.7	47.7	30.5	45.9	29.4	44.1
	54	51.9	78.0	40.5	60.9	33.3	50.1	30.6	45.9	29.4	44.2	28.3	42.5
	56	50.0	75.2	39.1	58.7	32.1	48.3	29.5	44.3	28.4	42.6	27.3	41.0
	58	48.3	72.6	37.7	56.7	31.0	46.6	28.5	42.8	27.4	41.2	26.3	39.6
	60	46.7	70.2	36.5	54.8	30.0	45.1	27.5	41.3	26.5	39.8	25.5	38.3
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2800	4210	2190	3290	1800	2700	1650	2480	1590	2390	1530	2300
M_y/Ω_b	$\phi_b M_y$, kip-ft	311	468	244	367	202	304	179	269	174	261	168	253
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	350	526	273	411	225	338	206	310	199	298	191	287
BF_1/Ω_b	$\phi_b BF_1$, kips	7.58	11.4	8.03	12.1	7.48	11.2	11.0	16.5	10.2	15.4	9.41	14.1
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	38.6	58.1	33.6	50.5	29.7	44.7	29.0	43.6	28.3	42.6	27.4	41.3
V_n/Ω_v	$\phi_v V_{nx}$, kips	135	202	119	179	96.5	145	120	180	107	161	96.5	145
Z_x, in.^{3}		234		183		150		138		133		128	
L_p, ft		7.12		6.98		6.89		4.66		4.68		4.70	
L_y, ft		12.2		10.7		9.94		7.13		7.09		7.10	
L_r, ft		87.9		68.8		59.3		46.0		45.3		45.3	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W18–W16

Shape		W18×										W16×	
		55		50		46		40		35		100	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6	192	289							126	190		
	7	190	286	152	229	153	230	127	192	111	167		
	8	167	251	147	221	136	205	112	168	97.1	146		
	9	148	223	131	196	121	182	99.4	149	86.3	130	246	370
	10	133	200	118	177	109	164	89.5	135	77.6	117	237	356
	11	121	182	107	161	99.1	149	81.4	122	70.6	106	215	324
	12	111	167	98.0	147	90.8	137	74.6	112	64.7	97.2	198	297
	13	103	154	90.4	136	83.9	126	68.8	103	59.7	89.8	182	274
	14	95.2	143	84.0	126	77.9	117	63.9	96.1	55.5	83.4	169	254
	15	88.9	134	78.4	118	72.7	109	59.7	89.7	51.8	77.8	158	237
	16	83.3	125	73.5	110	68.1	102	55.9	84.1	48.5	72.9	148	223
	17	78.4	118	69.2	104	64.1	96.4	52.6	79.1	45.7	68.6	139	210
	18	74.1	111	65.3	98.2	60.6	91.0	49.7	74.7	43.1	64.8	132	198
	19	70.2	105	61.9	93.0	57.4	86.2	47.1	70.8	40.9	61.4	125	187
	20	66.7	100	58.8	88.4	54.5	81.9	44.7	67.3	38.8	58.3	119	178
	21	63.5	95.4	56.0	84.2	51.9	78.0	42.6	64.0	37.0	55.6	113	170
	22	60.6	91.1	53.4	80.3	49.6	74.5	40.7	61.1	35.3	53.0	108	162
	23	58.0	87.1	51.1	76.8	47.4	71.2	38.9	58.5	33.8	50.7	103	155
	24	55.6	83.5	49.0	73.6	45.4	68.3	37.3	56.0	32.4	48.6	98.8	148
	25	53.3	80.2	47.0	70.7	43.6	65.5	35.8	53.8	31.1	46.7	94.8	142
	26	51.3	77.1	45.2	68.0	41.9	63.0	34.4	51.7	29.9	44.9	91.2	137
	27	49.4	74.2	43.5	65.5	40.4	60.7	33.1	49.8	28.8	43.2	87.8	132
	28	47.6	71.6	42.0	63.1	38.9	58.5	32.0	48.0	27.7	41.7	84.6	127
	29	46.0	69.1	40.5	60.9	37.6	56.5	30.9	46.4	26.8	40.2	81.7	123
	30	44.4	66.8	39.2	58.9	36.3	54.6	29.8	44.8	25.9	38.9	79.0	119
	32	41.7	62.6	36.7	55.2	34.1	51.2	28.0	42.0	24.3	36.5	74.1	111
	34	39.2	58.9	34.6	52.0	32.1	48.2	26.3	39.6	22.8	34.3	69.7	105
	36	37.0	55.7	32.7	49.1	30.3	45.5	24.9	37.4	21.6	32.4	65.8	99.0
	38	35.1	52.7	30.9	46.5	28.7	43.1	23.5	35.4	20.4	30.7	62.4	93.7
	40	33.3	50.1	29.4	44.2	27.3	41.0	22.4	33.6	19.4	29.2	59.3	89.1
	42	31.7	47.7	28.0	42.1	26.0	39.0	21.3	32.0	18.5	27.8	56.4	84.8
	44	30.3	45.5	26.7	40.2	24.8	37.2	20.3	30.6	17.6	26.5	53.9	81.0
	46	29.0	43.6	25.6	38.4	23.7	35.6	19.5	29.2	16.9	25.4	51.5	77.4
	48	27.8	41.8	24.5	36.8	22.7	34.1	18.6	28.0	16.2	24.3	49.4	74.2
	50	26.7	40.1	23.5	35.3	21.8	32.8	17.9	26.9	15.5	23.3	47.4	71.2
	52	25.6	38.5	22.6	34.0	21.0	31.5	17.2	25.9	14.9	22.4	45.6	68.5
	54	24.7	37.1	21.8	32.7	20.2	30.3	16.6	24.9	14.4	21.6	43.9	66.0
	56	23.8	35.8	21.0	31.6	19.5	29.3	16.0	24.0	13.9	20.8	42.3	63.6
	58	23.0	34.6	20.3	30.5	18.8	28.3	15.4	23.2	13.4	20.1	40.9	61.4
	60	22.2	33.4	19.6	29.5	18.2	27.3	14.9	22.4	12.9	19.4	39.5	59.4
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1330	2000	1180	1770	1090	1640	895	1350	776	1170	2370	3560
M_y/Ω_b	$\phi_b M_y$, kip-ft	146	219	130	195	119	179	97.3	146	83.4	125	262	395
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	167	251	147	221	136	205	112	168	97.1	146	296	445
BF_1/Ω_b	$\phi_b BF_1$, kips	10.1	15.2	9.34	14.0	11.0	16.5	10.8	16.2	11.1	16.7	6.14	9.23
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	25.2	37.8	23.2	34.8	22.7	34.1	19.7	29.6	17.5	26.3	32.1	48.3
V_n/Ω_v	$\phi_v V_{nx}$, kips	96.0	144	76.1	114	76.6	115	63.7	95.8	63.1	94.8	123	185
Z_x, in.^{3}		111		98.2		91.0		74.7		64.8		198	
L_p, ft		4.58		4.57		3.67		3.58		3.47		6.71	
L_y, ft		6.63		6.43		5.25		4.93		4.70		12.2	
L_r, ft		39.8		36.7		31.0		27.2		25.0		90.5	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W16

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W16×											
		89		77		67		57		50		45	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6							191	287	158	238	144	217
	7							186	279	155	233	138	208
	8					173	260	162	244	135	204	121	182
	9			192	289	164	246	144	217	120	181	108	162
	10	217	327	176	265	147	222	130	195	108	163	96.9	146
	11	209	314	160	241	134	202	118	178	98.5	148	88.1	132
	12	191	288	147	220	123	185	108	163	90.3	136	80.7	121
	13	177	265	135	204	113	171	100	150	83.4	125	74.5	112
	14	164	246	126	189	105	158	92.9	140	77.4	116	69.2	104
	15	153	230	117	176	98.3	148	86.7	130	72.3	109	64.6	97.1
	16	143	216	110	165	92.2	139	81.2	122	67.7	102	60.6	91.0
	17	135	203	104	156	86.8	130	76.5	115	63.8	95.8	57.0	85.7
	18	128	192	97.8	147	81.9	123	72.2	109	60.2	90.5	53.8	80.9
	19	121	182	92.6	139	77.6	117	68.4	103	57.0	85.7	51.0	76.6
	20	115	173	88.0	132	73.7	111	65.0	97.7	54.2	81.4	48.4	72.8
	21	109	164	83.8	126	70.2	106	61.9	93.0	51.6	77.6	46.1	69.3
	22	104	157	80.0	120	67.0	101	59.1	88.8	49.3	74.0	44.0	66.2
	23	99.8	150	76.5	115	64.1	96.4	56.5	84.9	47.1	70.8	42.1	63.3
	24	95.7	144	73.3	110	61.4	92.4	54.2	81.4	45.2	67.9	40.4	60.7
	25	91.8	138	70.4	106	59.0	88.7	52.0	78.2	43.4	65.2	38.8	58.2
	26	88.3	133	67.7	102	56.7	85.3	50.0	75.1	41.7	62.7	37.3	56.0
	27	85.0	128	65.2	98.0	54.6	82.1	48.1	72.4	40.1	60.3	35.9	53.9
	28	82.0	123	62.9	94.5	52.7	79.2	46.4	69.8	38.7	58.2	34.6	52.0
	29	79.2	119	60.7	91.2	50.9	76.4	44.8	67.4	37.4	56.2	33.4	50.2
	30	76.5	115	58.7	88.2	49.2	73.9	43.3	65.1	36.1	54.3	32.3	48.5
	32	71.7	108	55.0	82.7	46.1	69.3	40.6	61.1	33.9	50.9	30.3	45.5
	34	67.5	101	51.8	77.8	43.4	65.2	38.2	57.5	31.9	47.9	28.5	42.8
	36	63.8	95.9	48.9	73.5	41.0	61.6	36.1	54.3	30.1	45.2	26.9	40.4
	38	60.4	90.8	46.3	69.6	38.8	58.3	34.2	51.4	28.5	42.9	25.5	38.3
	40	57.4	86.3	44.0	66.1	36.9	55.4	32.5	48.8	27.1	40.7	24.2	36.4
	42	54.7	82.2	41.9	63.0	35.1	52.8	31.0	46.5	25.8	38.8	23.1	34.7
	44	52.2	78.4	40.0	60.1	33.5	50.4	29.5	44.4	24.6	37.0	22.0	33.1
	46	49.9	75.0	38.3	57.5	32.1	48.2	28.3	42.5	23.6	35.4	21.1	31.7
	48	47.8	71.9	36.7	55.1	30.7	46.2	27.1	40.7	22.6	33.9	20.2	30.3
	50	45.9	69.0	35.2	52.9	29.5	44.3	26.0	39.1	21.7	32.6	19.4	29.1
	52	44.2	66.4	33.9	50.9	28.4	42.6	25.0	37.6	20.8	31.3	18.6	28.0
	54	42.5	63.9	32.6	49.0	27.3	41.0	24.1	36.2	20.1	30.2	17.9	27.0
	56	41.0	61.6	31.4	47.2	26.3	39.6	23.2	34.9	19.4	29.1	17.3	26.0
	58	39.6	59.5	30.3	45.6	25.4	38.2	22.4	33.7	18.7	28.1	16.7	25.1
	60	38.3	57.5	29.3	44.1	24.6	36.9	21.7	32.6	18.1	27.1	16.1	24.3
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2300	3450	1760	2650	1470	2220	1300	1950	1080	1630	969	1460
M_y/Ω_b	$\phi_b M_y$, kip-ft	256	384	197	296	165	248	142	214	119	179	107	161
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	287	431	220	331	184	277	162	244	135	204	121	182
BF_1/Ω_b	$\phi_b BF_1$, kips	5.65	8.49	6.02	9.05	6.02	9.05	7.82	11.7	7.64	11.5	7.43	11.2
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	31.2	46.9	26.9	40.5	24.1	36.2	22.7	34.1	20.4	30.7	18.9	28.4
V_n/Ω_v	$\phi_v V_{nx}$, kips	109	163	96.0	144	86.4	130	95.5	143	79.1	119	72.1	108
Z_x, in.^{3}		192		147		123		109		90.5		80.9	
L_p, ft		6.75		6.55		6.42		4.42		4.36		4.32	
L_y, ft		12.3		10.4		9.58		7.03		6.48		6.24	
L_r, ft		91.1		69.8		60.0		47.4		40.3		37.4	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W16–W14

Shape		W16×								W14×			
		40		36		31		26		132		120	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6			120	181	102	153	84.6	127				
	7	121	182	113	170	92.7	139	74.6	112				
	8	108	162	99.1	149	81.1	122	65.3	98.1				
	9	95.6	144	88.1	132	72.1	108	58.0	87.2				
	10	86.1	129	79.3	119	64.9	97.6	52.2	78.5				
	11	78.2	118	72.1	108	59.0	88.7	47.5	71.4	237	356	234	352
	12	71.7	108	66.1	99.3	54.1	81.3	43.5	65.4	226	340	222	334
	13	66.2	99.5	61.0	91.7	49.9	75.0	40.2	60.4	209	314	205	309
	14	61.5	92.4	56.6	85.1	46.4	69.7	37.3	56.1	194	291	191	287
	15	57.4	86.2	52.9	79.4	43.3	65.0	34.8	52.3	181	272	178	267
	16	53.8	80.8	49.6	74.5	40.6	61.0	32.6	49.1	170	255	167	251
	17	50.6	76.1	46.6	70.1	38.2	57.4	30.7	46.2	160	240	157	236
	18	47.8	71.9	44.0	66.2	36.1	54.2	29.0	43.6	151	227	148	223
	19	45.3	68.1	41.7	62.7	34.2	51.3	27.5	41.3	143	215	140	211
	20	43.0	64.7	39.6	59.6	32.5	48.8	26.1	39.3	136	204	133	201
	21	41.0	61.6	37.8	56.7	30.9	46.5	24.9	37.4	129	194	127	191
	22	39.1	58.8	36.0	54.2	29.5	44.3	23.7	35.7	123	185	121	182
	23	37.4	56.2	34.5	51.8	28.2	42.4	22.7	34.1	118	177	116	174
	24	35.9	53.9	33.0	49.7	27.0	40.6	21.8	32.7	113	170	111	167
	25	34.4	51.7	31.7	47.7	26.0	39.0	20.9	31.4	109	163	107	160
	26	33.1	49.7	30.5	45.8	25.0	37.5	20.1	30.2	104	157	103	154
	27	31.9	47.9	29.4	44.1	24.0	36.1	19.3	29.1	101	151	98.9	149
	28	30.7	46.2	28.3	42.6	23.2	34.8	18.7	28.0	96.9	146	95.3	143
	29	29.7	44.6	27.3	41.1	22.4	33.6	18.0	27.1	93.6	141	92.0	138
	30	28.7	43.1	26.4	39.7	21.6	32.5	17.4	26.2	90.5	136	89.0	134
	32	26.9	40.4	24.8	37.2	20.3	30.5	16.3	24.5	84.8	127	83.4	125
	34	25.3	38.0	23.3	35.0	19.1	28.7	15.4	23.1	79.8	120	78.5	118
	36	23.9	35.9	22.0	33.1	18.0	27.1	14.5	21.8	75.4	113	74.1	111
	38	22.6	34.0	20.9	31.4	17.1	25.7	13.7	20.7	71.4	107	70.2	106
	40	21.5	32.3	19.8	29.8	16.2	24.4	13.1	19.6	67.8	102	66.7	100
	42	20.5	30.8	18.9	28.4	15.5	23.2	12.4	18.7	64.6	97.1	63.5	95.5
	44	19.6	29.4	18.0	27.1	14.8	22.2	11.9	17.8	61.7	92.7	60.7	91.2
	46	18.7	28.1	17.2	25.9	14.1	21.2	11.4	17.1	59.0	88.7	58.0	87.2
	48	17.9	26.9	16.5	24.8	13.5	20.3	10.9	16.4	56.5	85.0	55.6	83.6
	50	17.2	25.9	15.9	23.8	13.0	19.5	10.4	15.7	54.3	81.6	53.4	80.2
	52	16.5	24.9	15.2	22.9	12.5	18.8	10.0	15.1	52.2	78.4	51.3	77.1
	54	15.9	24.0	14.7	22.1	12.0	18.1	9.67	14.5	50.3	75.5	49.4	74.3
	56	15.4	23.1	14.2	21.3	11.6	17.4	9.33	14.0	48.5	72.8	47.7	71.6
	58	14.8	22.3	13.7	20.5	11.2	16.8	9.01	13.5	46.8	70.3	46.0	69.2
	60	14.3	21.6	13.2	19.9	10.8	16.3	8.70	13.1	45.2	68.0	44.5	66.9
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	861	1290	793	1190	649	976	522	785	2710	4080	2670	4010
M_y/Ω_b	$\phi_b M_y$, kip-ft	95.2	143	87.3	131	70.8	106	56.7	85.2	304	457	298	448
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	108	162	99.1	149	81.1	122	65.3	98.1	339	510	334	501
BF_1/Ω_b	$\phi_b BF_1$, kips	7.09	10.7	7.20	10.8	8.23	12.4	7.83	11.8	3.45	5.19	3.40	5.11
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	17.4	26.2	16.4	24.6	14.8	22.2	12.4	18.7	29.9	45.0	29.2	43.8
V_n/Ω_v	$\phi_v V_{nx}$, kips	60.5	91.0	60.2	90.4	51.0	76.6	42.3	63.6	119	178	117	176
Z_x, in.^{3}		71.9		66.2		54.2		43.6		227		223	
L_p, ft		4.28		4.22		3.30		3.22		9.68		9.71	
L_y, ft		6.03		5.86		4.56		4.32		19.9		20.2	
L_r, ft		34.5		32.7		25.2		22.5		155		157	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W14

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W14×											
		109		99		90		82		74		68	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	8									165	248		
	9							185	278	160	240	148	223
	10			184	276			184	276	144	216	138	208
	11			182	274	163	245	167	251	131	196	126	189
	12			167	251	161	243	153	230	120	180	115	173
	13	185	278	154	232	149	224	141	212	111	166	106	160
	14	182	274	143	215	138	208	131	197	103	154	98.7	148
	15	170	256	134	201	129	194	122	184	95.8	144	92.1	138
	16	159	240	125	188	121	182	115	172	89.8	135	86.4	130
	17	150	226	118	177	114	171	108	162	84.6	127	81.3	122
	18	142	213	111	167	108	162	102	153	79.9	120	76.8	115
	19	134	202	106	159	102	153	96.6	145	75.7	114	72.7	109
	20	128	192	100	151	96.8	146	91.8	138	71.9	108	69.1	104
	21	122	183	95.5	144	92.2	139	87.4	131	68.5	103	65.8	98.9
	22	116	174	91.1	137	88.0	132	83.4	125	65.3	98.2	62.8	94.4
	23	111	167	87.2	131	84.2	127	79.8	120	62.5	93.9	60.1	90.3
	24	106	160	83.6	126	80.7	121	76.5	115	59.9	90.0	57.6	86.5
	25	102	153	80.2	121	77.4	116	73.4	110	57.5	86.4	55.3	83.1
	26	98.2	148	77.1	116	74.5	112	70.6	106	55.3	83.1	53.2	79.9
	27	94.5	142	74.3	112	71.7	108	68.0	102	53.2	80.0	51.2	76.9
	28	91.1	137	71.6	108	69.1	104	65.5	98.5	51.3	77.2	49.4	74.2
	29	88.0	132	69.1	104	66.8	100	63.3	95.1	49.6	74.5	47.7	71.6
	30	85.1	128	66.8	100	64.5	97.0	61.2	91.9	47.9	72.0	46.1	69.2
	32	79.7	120	62.7	94.2	60.5	90.9	57.4	86.2	44.9	67.5	43.2	64.9
	34	75.1	113	59.0	88.6	56.9	85.6	54.0	81.1	42.3	63.5	40.6	61.1
	36	70.9	107	55.7	83.7	53.8	80.8	51.0	76.6	39.9	60.0	38.4	57.7
	38	67.2	101	52.8	79.3	51.0	76.6	48.3	72.6	37.8	56.9	36.4	54.7
	40	63.8	95.9	50.1	75.3	48.4	72.8	45.9	69.0	35.9	54.0	34.5	51.9
	42	60.8	91.3	47.7	71.8	46.1	69.3	43.7	65.7	34.2	51.4	32.9	49.5
	44	58.0	87.2	45.6	68.5	44.0	66.1	41.7	62.7	32.7	49.1	31.4	47.2
	46	55.5	83.4	43.6	65.5	42.1	63.3	39.9	60.0	31.2	47.0	30.0	45.2
	48	53.2	79.9	41.8	62.8	40.3	60.6	38.2	57.5	29.9	45.0	28.8	43.3
	50	51.0	76.7	40.1	60.3	38.7	58.2	36.7	55.2	28.7	43.2	27.6	41.5
	52	49.1	73.8	38.6	58.0	37.2	56.0	35.3	53.0	27.6	41.5	26.6	39.9
	54	47.3	71.0	37.1	55.8	35.9	53.9	34.0	51.1	26.6	40.0	25.6	38.5
	56	45.6	68.5	35.8	53.8	34.6	52.0	32.8	49.3	25.7	38.6	24.7	37.1
	58	44.0	66.1	34.6	52.0	33.4	50.2	31.6	47.6	24.8	37.3	23.8	35.8
	60	42.5	63.9	33.4	50.2	32.3	48.5	30.6	46.0	24.0	36.0	23.0	34.6
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2550	3840	2010	3010	1940	2910	1840	2760	1440	2160	1380	2080
M_y/Ω_b	$\phi_b M_y$, kip-ft	287	432	227	341	220	331	204	306	161	242	155	233
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	319	479	251	377	242	364	229	345	180	270	173	260
BF_1/Ω_b	$\phi_b BF_1$, kips	3.07	4.62	3.42	5.14	3.19	4.79	3.67	5.52	4.07	6.12	3.78	5.69
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	28.1	42.3	25.0	37.6	24.3	36.4	23.3	35.0	20.7	31.2	20.0	30.1
V_n/Ω_v	$\phi_v V_{nx}$, kips	92.5	139	91.8	138	81.5	122	92.5	139	82.6	124	74.2	112
Z_x, in.^{3}		213		167		162		153		120		115	
L_p, ft		9.72		9.52		9.50		6.64		6.51		6.48	
L_y, ft		20.1		16.4		16.4		13.7		11.1		11.1	
L_r, ft		157		118		118		106		79.8		79.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W14

Shape		W14×											
		61		53		48		43		38		34	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6									114	171	96.1	144
	7			135	203	125	188	111	166	102	153	91.0	137
	8	135	203	123	184	120	180	97.9	147	89.0	134	79.6	120
	9	130	196	109	164	106	160	87.1	131	79.1	119	70.8	106
	10	117	176	98.1	147	95.7	144	78.3	118	71.2	107	63.7	95.7
	11	107	160	89.1	134	87.0	131	71.2	107	64.7	97.3	57.9	87.0
	12	97.8	147	81.7	123	79.7	120	65.3	98.1	59.3	89.2	53.1	79.8
	13	90.3	136	75.4	113	73.6	111	60.3	90.6	54.8	82.3	49.0	73.6
	14	83.8	126	70.0	105	68.4	103	56.0	84.1	50.9	76.5	45.5	68.4
	15	78.2	118	65.4	98.2	63.8	95.9	52.2	78.5	47.5	71.4	42.5	63.8
	16	73.3	110	61.3	92.1	59.8	89.9	49.0	73.6	44.5	66.9	39.8	59.8
	17	69.0	104	57.7	86.7	56.3	84.6	46.1	69.3	41.9	63.0	37.5	56.3
	18	65.2	98.0	54.5	81.9	53.2	79.9	43.5	65.4	39.6	59.5	35.4	53.2
	19	61.8	92.8	51.6	77.6	50.4	75.7	41.2	62.0	37.5	56.3	33.5	50.4
	20	58.7	88.2	49.0	73.7	47.8	71.9	39.2	58.9	35.6	53.5	31.8	47.9
	21	55.9	84.0	46.7	70.2	45.6	68.5	37.3	56.1	33.9	51.0	30.3	45.6
	22	53.3	80.2	44.6	67.0	43.5	65.4	35.6	53.5	32.4	48.7	28.9	43.5
	23	51.0	76.7	42.6	64.1	41.6	62.5	34.1	51.2	31.0	46.5	27.7	41.6
	24	48.9	73.5	40.9	61.4	39.9	59.9	32.6	49.1	29.7	44.6	26.5	39.9
	25	46.9	70.5	39.2	58.9	38.3	57.5	31.3	47.1	28.5	42.8	25.5	38.3
	26	45.1	67.8	37.7	56.7	36.8	55.3	30.1	45.3	27.4	41.2	24.5	36.8
	27	43.5	65.3	36.3	54.6	35.4	53.3	29.0	43.6	26.4	39.6	23.6	35.4
	28	41.9	63.0	35.0	52.6	34.2	51.4	28.0	42.1	25.4	38.2	22.7	34.2
	29	40.5	60.8	33.8	50.8	33.0	49.6	27.0	40.6	24.6	36.9	22.0	33.0
	30	39.1	58.8	32.7	49.1	31.9	47.9	26.1	39.3	23.7	35.7	21.2	31.9
	32	36.7	55.1	30.6	46.1	29.9	44.9	24.5	36.8	22.3	33.4	19.9	29.9
	34	34.5	51.9	28.8	43.3	28.1	42.3	23.0	34.6	20.9	31.5	18.7	28.1
	36	32.6	49.0	27.2	40.9	26.6	40.0	21.8	32.7	19.8	29.7	17.7	26.6
	38	30.9	46.4	25.8	38.8	25.2	37.8	20.6	31.0	18.7	28.2	16.8	25.2
	40	29.3	44.1	24.5	36.8	23.9	36.0	19.6	29.4	17.8	26.8	15.9	23.9
	42	27.9	42.0	23.3	35.1	22.8	34.2	18.7	28.0	17.0	25.5	15.2	22.8
	44	26.7	40.1	22.3	33.5	21.7	32.7	17.8	26.8	16.2	24.3	14.5	21.8
	46	25.5	38.3	21.3	32.0	20.8	31.3	17.0	25.6	15.5	23.3	13.8	20.8
	48	24.4	36.7	20.4	30.7	19.9	30.0	16.3	24.5	14.8	22.3	13.3	19.9
	50	23.5	35.3	19.6	29.5	19.1	28.8	15.7	23.6	14.2	21.4	12.7	19.1
	52	22.6	33.9	18.9	28.3	18.4	27.7	15.1	22.6	13.7	20.6	12.2	18.4
	54	21.7	32.7	18.2	27.3	17.7	26.6	14.5	21.8	13.2	19.8	11.8	17.7
	56	21.0	31.5	17.5	26.3	17.1	25.7	14.0	21.0	12.7	19.1	11.4	17.1
	58	20.2	30.4	16.9	25.4	16.5	24.8	13.5	20.3	12.3	18.5	11.0	16.5
	60	19.6	29.4	16.3	24.6	15.9	24.0	13.1	19.6	11.9	17.8	10.6	16.0
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1170	1760	981	1470	957	1440	783	1180	712	1070	637	957
M_y/Ω_b	$\phi_b M_y$, kip-ft	132	199	109	164	107	161	87.9	132	79.0	119	70.9	107
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	147	220	123	184	120	180	97.9	147	89.0	134	79.6	120
BF_1/Ω_b	$\phi_b BF_1$, kips	3.87	5.82	4.50	6.77	4.27	6.41	4.31	6.48	5.30	7.97	5.03	7.55
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	18.3	27.5	16.6	24.9	16.3	24.4	14.4	21.7	14.1	21.1	13.0	19.6
V_n/Ω_v	$\phi_v V_{nx}$, kips	67.4	101	67.4	101	62.5	93.9	55.4	83.2	56.9	85.5	48.1	72.2
Z_x, in.^{3}		98.0		81.9		79.9		65.4		59.5		53.2	
L_p, ft		6.41		5.10		5.11		5.02		4.19		4.17	
L_y, ft		10.1		8.05		8.05		7.36		6.09		5.90	
L_r, ft		67.6		53.8		53.7		44.9		36.7		34.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W14–W12

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W14×						W12×					
		30		26		22		106		96		87	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	5	94.9	143	80.6	121	65.5	98.5						
	6	91.4	137	76.9	116	65.2	98.0						
	7	78.4	118	65.9	99.0	55.9	84.0						
	8	68.6	103	57.7	86.7	48.9	73.5						
	9	60.9	91.6	51.2	77.0	43.5	65.3	209	313			162	243
	10	54.9	82.4	46.1	69.3	39.1	58.8	196	295	184	277	146	219
	11	49.9	74.9	41.9	63.0	35.6	53.4	178	268	173	260	133	199
	12	45.7	68.7	38.4	57.8	32.6	49.0	163	246	158	238	122	183
	13	42.2	63.4	35.5	53.3	30.1	45.2	151	227	146	220	112	169
	14	39.2	58.9	32.9	49.5	27.9	42.0	140	211	136	204	104	157
	15	36.6	55.0	30.7	46.2	26.1	39.2	131	196	127	191	97.2	146
	16	34.3	51.5	28.8	43.3	24.4	36.7	123	184	119	179	91.1	137
	17	32.3	48.5	27.1	40.8	23.0	34.6	115	173	112	168	85.8	129
	18	30.5	45.8	25.6	38.5	21.7	32.7	109	164	106	159	81.0	122
	19	28.9	43.4	24.3	36.5	20.6	30.9	103	155	100	150	76.7	115
	20	27.4	41.2	23.1	34.7	19.6	29.4	98.1	147	95.1	143	72.9	110
	21	26.1	39.3	22.0	33.0	18.6	28.0	93.4	140	90.5	136	69.4	104
	22	24.9	37.5	21.0	31.5	17.8	26.7	89.1	134	86.4	130	66.3	99.6
	23	23.8	35.8	20.1	30.1	17.0	25.6	85.3	128	82.7	124	63.4	95.3
	24	22.9	34.4	19.2	28.9	16.3	24.5	81.7	123	79.2	119	60.8	91.3
	25	21.9	33.0	18.4	27.7	15.6	23.5	78.4	118	76.1	114	58.3	87.7
	26	21.1	31.7	17.7	26.7	15.0	22.6	75.4	113	73.1	110	56.1	84.3
	27	20.3	30.5	17.1	25.7	14.5	21.8	72.6	109	70.4	106	54.0	81.2
	28	19.6	29.4	16.5	24.8	14.0	21.0	70.0	105	67.9	102	52.1	78.3
	29	18.9	28.4	15.9	23.9	13.5	20.3	67.6	102	65.6	98.5	50.3	75.6
	30	18.3	27.5	15.4	23.1	13.0	19.6	65.4	98.2	63.4	95.3	48.6	73.1
	32	17.1	25.8	14.4	21.7	12.2	18.4	61.3	92.1	59.4	89.3	45.6	68.5
	34	16.1	24.2	13.6	20.4	11.5	17.3	57.7	86.7	55.9	84.1	42.9	64.5
	36	15.2	22.9	12.8	19.3	10.9	16.3	54.5	81.9	52.8	79.4	40.5	60.9
	38	14.4	21.7	12.1	18.2	10.3	15.5	51.6	77.6	50.0	75.2	38.4	57.7
	40	13.7	20.6	11.5	17.3	9.78	14.7	49.0	73.7	47.5	71.4	36.5	54.8
	42	13.1	19.6	11.0	16.5	9.31	14.0	46.7	70.2	45.3	68.0	34.7	52.2
	44	12.5	18.7	10.5	15.8	8.89	13.4	44.6	67.0	43.2	65.0	33.1	49.8
	46	11.9	17.9	10.0	15.1	8.50	12.8	42.6	64.1	41.3	62.1	31.7	47.6
	48	11.4	17.2	9.61	14.4	8.15	12.2	40.9	61.4	39.6	59.5	30.4	45.7
	50	11.0	16.5	9.22	13.9	7.82	11.8	39.2	58.9	38.0	57.2	29.2	43.8
	52	10.5	15.9	8.87	13.3	7.52	11.3	37.7	56.7	36.6	55.0	28.0	42.1
	54	10.2	15.3	8.54	12.8	7.24	10.9	36.3	54.6	35.2	52.9	27.0	40.6
	56	9.80	14.7	8.24	12.4	6.98	10.5	35.0	52.6	34.0	51.0	26.0	39.1
	58	9.46	14.2	7.95	12.0	6.74	10.1	33.8	50.8	32.8	49.3	25.1	37.8
	60	9.14	13.7	7.69	11.6	6.52	9.80	32.7	49.1	31.7	47.6	24.3	36.5
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	549	824	461	693	391	588	1960	2950	1900	2860	1460	2190
M_y/Ω_b	$\phi_b M_y$, kip-ft	60.6	91.1	50.5	75.9	42.9	64.5	217	326	211	317	164	246
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	68.6	103	57.7	86.7	48.9	73.5	245	368	238	357	182	274
BF_1/Ω_b	$\phi_b BF_1$, kips	5.10	7.67	6.08	9.14	5.59	8.40	2.71	4.07	2.52	3.79	2.70	4.06
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	11.6	17.4	10.8	16.2	9.52	14.3	21.6	32.5	21.0	31.5	18.4	27.6
V_n/Ω_v	$\phi_v V_{nx}$, kips	47.5	71.3	40.3	60.5	32.8	49.2	104	157	92.0	138	80.8	122
Z_x, in.^{3}		45.8		38.5		32.7		164		159		122	
L_p, ft		4.07		3.03		2.99		8.09		8.13		7.91	
L_y, ft		5.63		4.21		4.06		18.6		18.8		14.8	
L_r, ft		31.2		23.5		21.7		149		150		112	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

W12

Shape		W12×											
		79		72		65		58		53		50	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7											118	178
	8			143	215			110	166	110	165	104	157
	9	144	217	135	203	117	176	110	166	100	150	92.7	139
	10	143	214	121	182	116	175	99.2	149	90.0	135	83.5	125
	11	130	195	110	166	106	159	90.2	136	81.8	123	75.9	114
	12	119	179	101	152	96.9	146	82.7	124	75.0	113	69.6	105
	13	110	165	93.3	140	89.5	134	76.3	115	69.3	104	64.2	96.5
	14	102	153	86.7	130	83.1	125	70.9	107	64.3	96.7	59.6	89.6
	15	95.1	143	80.9	122	77.5	117	66.1	99.4	60.0	90.2	55.6	83.6
	16	89.1	134	75.8	114	72.7	109	62.0	93.2	56.3	84.6	52.2	78.4
	17	83.9	126	71.4	107	68.4	103	58.4	87.7	53.0	79.6	49.1	73.8
	18	79.2	119	67.4	101	64.6	97.1	55.1	82.8	50.0	75.2	46.4	69.7
	19	75.1	113	63.9	96.0	61.2	92.0	52.2	78.5	47.4	71.2	43.9	66.0
	20	71.3	107	60.7	91.2	58.1	87.4	49.6	74.6	45.0	67.7	41.7	62.7
	21	67.9	102	57.8	86.8	55.4	83.2	47.2	71.0	42.9	64.4	39.7	59.7
	22	64.8	97.4	55.1	82.9	52.9	79.4	45.1	67.8	40.9	61.5	37.9	57.0
	23	62.0	93.2	52.7	79.3	50.6	76.0	43.1	64.8	39.1	58.8	36.3	54.5
	24	59.4	89.3	50.5	76.0	48.5	72.8	41.3	62.1	37.5	56.4	34.8	52.3
	25	57.0	85.7	48.5	72.9	46.5	69.9	39.7	59.6	36.0	54.1	33.4	50.2
	26	54.9	82.4	46.7	70.1	44.7	67.2	38.2	57.3	34.6	52.0	32.1	48.3
	27	52.8	79.4	44.9	67.5	43.1	64.7	36.7	55.2	33.3	50.1	30.9	46.5
	28	50.9	76.6	43.3	65.1	41.5	62.4	35.4	53.3	32.2	48.3	29.8	44.8
	29	49.2	73.9	41.8	62.9	40.1	60.3	34.2	51.4	31.0	46.7	28.8	43.3
	30	47.5	71.5	40.4	60.8	38.8	58.3	33.1	49.7	30.0	45.1	27.8	41.8
	32	44.6	67.0	37.9	57.0	36.3	54.6	31.0	46.6	28.1	42.3	26.1	39.2
	34	41.9	63.0	35.7	53.6	34.2	51.4	29.2	43.9	26.5	39.8	24.5	36.9
	36	39.6	59.5	33.7	50.6	32.3	48.5	27.6	41.4	25.0	37.6	23.2	34.8
	38	37.5	56.4	31.9	48.0	30.6	46.0	26.1	39.2	23.7	35.6	22.0	33.0
	40	35.7	53.6	30.3	45.6	29.1	43.7	24.8	37.3	22.5	33.8	20.9	31.4
	42	34.0	51.0	28.9	43.4	27.7	41.6	23.6	35.5	21.4	32.2	19.9	29.9
	44	32.4	48.7	27.6	41.4	26.4	39.7	22.5	33.9	20.5	30.8	19.0	28.5
	46	31.0	46.6	26.4	39.6	25.3	38.0	21.6	32.4	19.6	29.4	18.1	27.3
	48	29.7	44.7	25.3	38.0	24.2	36.4	20.7	31.1	18.8	28.2	17.4	26.1
	50	28.5	42.9	24.3	36.5	23.3	35.0	19.8	29.8	18.0	27.1	16.7	25.1
	52	27.4	41.2	23.3	35.1	22.4	33.6	19.1	28.7	17.3	26.0	16.1	24.1
	54	26.4	39.7	22.5	33.8	21.5	32.4	18.4	27.6	16.7	25.1	15.5	23.2
	56	25.5	38.3	21.7	32.6	20.8	31.2	17.7	26.6	16.1	24.2	14.9	22.4
	58	24.6	37.0	20.9	31.4	20.0	30.1	17.1	25.7	15.5	23.3	14.4	21.6
	60	23.8	35.7	20.2	30.4	19.4	29.1	16.5	24.9	15.0	22.6	13.9	20.9
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1430	2140	1210	1820	1160	1750	992	1490	900	1350	835	1250
M_y/Ω_b	$\phi_b M_y$, kip-ft	161	241	137	206	132	199	112	169	102	153	93.2	140
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	178	268	152	228	145	218	124	186	113	169	104	157
BF_1/Ω_b	$\phi_b BF_1$, kips	2.56	3.84	2.72	4.09	2.44	3.66	2.68	4.02	2.74	4.12	3.16	4.74
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	18.1	27.1	16.5	24.8	16.0	24.0	14.7	22.1	13.9	20.9	13.3	20.0
V_n/Ω_v	$\phi_v V_{nx}$, kips	72.2	108	71.6	108	58.7	88.2	55.2	83.0	54.8	82.3	59.2	88.9
Z_x, in.^{3}		119		101		97.1		82.8		75.2		69.7	
L_p, ft		7.95		7.77		7.84		6.50		6.45		5.18	
L_y, ft		14.9		13.2		13.2		10.9		10.3		8.72	
L_r, ft		112		94.0		94.0		76.8		70.1		61.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W12×											
		45		40		35		30		26		22	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4											76.1	114
	5					101	152					66.8	100
	6	110	165			99.2	149	76.3	115	62.4	93.8	55.7	83.6
	7	107	161	86.2	130	85.0	128	73.4	110	61.6	92.5	47.7	71.7
	8	93.7	141	80.8	121	74.4	112	64.2	96.5	53.9	81.0	41.7	62.7
	9	83.3	125	71.8	108	66.1	99.4	57.1	85.8	47.9	72.0	37.1	55.8
	10	74.9	113	64.6	97.2	59.5	89.5	51.4	77.2	43.1	64.8	33.4	50.2
	11	68.1	102	58.8	88.3	54.1	81.3	46.7	70.2	39.2	58.9	30.4	45.6
	12	62.4	93.9	53.9	81.0	49.6	74.6	42.8	64.3	35.9	54.0	27.8	41.8
	13	57.6	86.6	49.7	74.7	45.8	68.8	39.5	59.4	33.2	49.8	25.7	38.6
	14	53.5	80.4	46.2	69.4	42.5	63.9	36.7	55.1	30.8	46.3	23.9	35.8
	15	50.0	75.1	43.1	64.8	39.7	59.7	34.2	51.5	28.7	43.2	22.3	33.5
	16	46.8	70.4	40.4	60.7	37.2	55.9	32.1	48.3	26.9	40.5	20.9	31.4
	17	44.1	66.3	38.0	57.1	35.0	52.6	30.2	45.4	25.4	38.1	19.6	29.5
	18	41.6	62.6	35.9	54.0	33.1	49.7	28.5	42.9	23.9	36.0	18.6	27.9
	19	39.4	59.3	34.0	51.1	31.3	47.1	27.0	40.6	22.7	34.1	17.6	26.4
	20	37.5	56.3	32.3	48.6	29.8	44.7	25.7	38.6	21.6	32.4	16.7	25.1
	21	35.7	53.6	30.8	46.3	28.3	42.6	24.5	36.8	20.5	30.8	15.9	23.9
	22	34.1	51.2	29.4	44.2	27.1	40.7	23.3	35.1	19.6	29.4	15.2	22.8
	23	32.6	49.0	28.1	42.2	25.9	38.9	22.3	33.6	18.7	28.2	14.5	21.8
	24	31.2	46.9	26.9	40.5	24.8	37.3	21.4	32.2	18.0	27.0	13.9	20.9
	25	30.0	45.1	25.9	38.9	23.8	35.8	20.5	30.9	17.2	25.9	13.4	20.1
	26	28.8	43.3	24.9	37.4	22.9	34.4	19.8	29.7	16.6	24.9	12.8	19.3
	27	27.8	41.7	23.9	36.0	22.0	33.1	19.0	28.6	16.0	24.0	12.4	18.6
	28	26.8	40.2	23.1	34.7	21.3	32.0	18.3	27.6	15.4	23.1	11.9	17.9
	29	25.8	38.8	22.3	33.5	20.5	30.9	17.7	26.6	14.9	22.3	11.5	17.3
	30	25.0	37.5	21.5	32.4	19.8	29.8	17.1	25.7	14.4	21.6	11.1	16.7
	32	23.4	35.2	20.2	30.4	18.6	28.0	16.1	24.1	13.5	20.2	10.4	15.7
	34	22.0	33.1	19.0	28.6	17.5	26.3	15.1	22.7	12.7	19.1	9.82	14.8
	36	20.8	31.3	18.0	27.0	16.5	24.9	14.3	21.4	12.0	18.0	9.28	13.9
	38	19.7	29.6	17.0	25.6	15.7	23.5	13.5	20.3	11.3	17.0	8.79	13.2
	40	18.7	28.2	16.2	24.3	14.9	22.4	12.8	19.3	10.8	16.2	8.35	12.5
	42	17.8	26.8	15.4	23.1	14.2	21.3	12.2	18.4	10.3	15.4	7.95	11.9
	44	17.0	25.6	14.7	22.1	13.5	20.3	11.7	17.5	9.80	14.7	7.59	11.4
	46	16.3	24.5	14.1	21.1	12.9	19.5	11.2	16.8	9.37	14.1	7.26	10.9
	48	15.6	23.5	13.5	20.2	12.4	18.6	10.7	16.1	8.98	13.5	6.96	10.5
	50	15.0	22.5	12.9	19.4	11.9	17.9	10.3	15.4	8.62	13.0	6.68	10.0
	52	14.4	21.7	12.4	18.7	11.4	17.2	9.88	14.8	8.29	12.5	6.42	9.65
	54	13.9	20.9	12.0	18.0	11.0	16.6	9.51	14.3	7.98	12.0	6.18	9.29
	56	13.4	20.1	11.5	17.3	10.6	16.0	9.17	13.8	7.70	11.6	5.96	8.96
	58	12.9	19.4	11.1	16.8	10.3	15.4	8.86	13.3	7.43	11.2	5.76	8.65
	60	12.5	18.8	10.8	16.2	9.92	14.9	8.56	12.9	7.18	10.8	5.57	8.36
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	749	1130	646	972	595	895	514	772	431	648	334	502
M_y/Ω_b	$\phi_b M_y$, kip-ft	83.9	126	73.1	110	66.1	99.3	57.7	86.7	48.5	72.9	36.1	54.3
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	93.7	141	80.8	121	74.4	112	64.2	96.5	53.9	81.0	41.7	62.7
BF_1/Ω_b	$\phi_b BF_1$, kips	3.16	4.75	2.84	4.26	3.97	5.97	3.48	5.23	3.31	4.98	5.45	8.19
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	12.5	18.8	11.4	17.1	11.4	17.1	10.3	15.5	9.17	13.8	8.19	12.3
V_n/Ω_v	$\phi_v V_{nx}$, kips	54.8	82.3	43.1	64.8	50.5	75.9	38.2	57.4	31.2	46.9	38.0	57.2
Z_x, in.^{3}		62.6		54.0		49.7		42.9		36.0		27.9	
L_p, ft		5.13		5.12		4.10		4.10		4.05		2.41	
L_y, ft		8.23		7.83		6.19		5.97		5.66		3.44	
L_r, ft		55.9		50.6		39.4		36.2		32.1		20.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

W12–W10

Shape		W12×						W10×					
		19		16		14		88		77		68	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4	62.3	93.6	56.9	85.5	52.2	78.4						
	5	57.3	86.1	45.5	68.4	41.7	62.7						
	6	47.7	71.7	37.9	57.0	34.8	52.3						
	7	40.9	61.5	32.5	48.8	29.8	44.8	175	262				
	8	35.8	53.8	28.4	42.7	26.1	39.2	169	254			121	182
	9	31.8	47.8	25.3	38.0	23.2	34.8	150	226	137	206	109	164
	10	28.6	43.0	22.7	34.2	20.9	31.4	135	203	128	193	98.2	148
	11	26.0	39.1	20.7	31.1	19.0	28.5	123	185	117	175	89.3	134
	12	23.9	35.9	19.0	28.5	17.4	26.1	113	170	107	161	81.8	123
	13	22.0	33.1	17.5	26.3	16.1	24.1	104	157	98.7	148	75.6	114
	14	20.4	30.7	16.2	24.4	14.9	22.4	96.7	145	91.7	138	70.2	105
	15	19.1	28.7	15.2	22.8	13.9	20.9	90.3	136	85.6	129	65.5	98.4
	16	17.9	26.9	14.2	21.4	13.0	19.6	84.6	127	80.2	121	61.4	92.3
	17	16.8	25.3	13.4	20.1	12.3	18.4	79.6	120	75.5	113	57.8	86.8
	18	15.9	23.9	12.6	19.0	11.6	17.4	75.2	113	71.3	107	54.6	82.0
	19	15.1	22.6	12.0	18.0	11.0	16.5	71.3	107	67.5	102	51.7	77.7
	20	14.3	21.5	11.4	17.1	10.4	15.7	67.7	102	64.2	96.4	49.1	73.8
	21	13.6	20.5	10.8	16.3	9.94	14.9	64.5	96.9	61.1	91.9	46.8	70.3
	22	13.0	19.6	10.3	15.5	9.49	14.3	61.5	92.5	58.3	87.7	44.6	67.1
	23	12.4	18.7	9.89	14.9	9.07	13.6	58.9	88.5	55.8	83.9	42.7	64.2
	24	11.9	17.9	9.48	14.2	8.69	13.1	56.4	84.8	53.5	80.4	40.9	61.5
	25	11.5	17.2	9.10	13.7	8.35	12.5	54.2	81.4	51.3	77.2	39.3	59.0
	26	11.0	16.5	8.75	13.1	8.03	12.1	52.1	78.3	49.4	74.2	37.8	56.8
	27	10.6	15.9	8.43	12.7	7.73	11.6	50.1	75.4	47.5	71.4	36.4	54.7
	28	10.2	15.4	8.12	12.2	7.45	11.2	48.3	72.7	45.8	68.9	35.1	52.7
	29	9.87	14.8	7.84	11.8	7.20	10.8	46.7	70.2	44.3	66.5	33.9	50.9
	30	9.54	14.3	7.58	11.4	6.96	10.5	45.1	67.8	42.8	64.3	32.7	49.2
	32	8.95	13.4	7.11	10.7	6.52	9.80	42.3	63.6	40.1	60.3	30.7	46.1
	34	8.42	12.7	6.69	10.1	6.14	9.22	39.8	59.8	37.7	56.7	28.9	43.4
	36	7.95	12.0	6.32	9.50	5.80	8.71	37.6	56.5	35.7	53.6	27.3	41.0
	38	7.53	11.3	5.99	9.00	5.49	8.25	35.6	53.5	33.8	50.8	25.8	38.8
	40	7.16	10.8	5.69	8.55	5.22	7.84	33.8	50.9	32.1	48.2	24.6	36.9
	42	6.82	10.2	5.42	8.14	4.97	7.47	32.2	48.4	30.6	45.9	23.4	35.1
	44	6.51	9.78	5.17	7.77	4.74	7.13	30.8	46.2	29.2	43.8	22.3	33.5
	46	6.22	9.35	4.95	7.43	4.54	6.82	29.4	44.2	27.9	41.9	21.4	32.1
	48	5.96	8.96	4.74	7.12	4.35	6.53	28.2	42.4	26.7	40.2	20.5	30.8
	50	5.73	8.61	4.55	6.84	4.17	6.27	27.1	40.7	25.7	38.6	19.6	29.5
	52	5.51	8.27	4.37	6.57	4.01	6.03	26.0	39.1	24.7	37.1	18.9	28.4
	54	5.30	7.97	4.21	6.33	3.86	5.81	25.1	37.7	23.8	35.7	18.2	27.3
	56	5.11	7.68	4.06	6.11	3.73	5.60	24.2	36.3	22.9	34.4	17.5	26.4
	58	4.94	7.42	3.92	5.89	3.60	5.41	23.3	35.1	22.1	33.3	16.9	25.5
	60	4.77	7.17	3.79	5.70	3.48	5.23	22.6	33.9	21.4	32.1	16.4	24.6
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	286	430	227	342	209	314	1350	2030	1280	1930	982	1480
M_y/Ω_b	$\phi_b M_y$, kip-ft	31.0	46.6	24.1	36.3	21.9	33.0	147	222	141	212	109	164
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	35.8	53.8	28.4	42.7	26.1	39.2	169	254	160	241	123	185
BF_1/Ω_b	$\phi_b BF_1$, kips	5.18	7.79	5.46	8.21	5.52	8.29	1.81	2.72	1.64	2.47	1.75	2.63
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	7.35	11.0	6.06	9.11	5.60	8.42	14.5	21.8	13.8	20.8	12.2	18.3
V_n/Ω_v	$\phi_v V_{nx}$, kips	31.1	46.8	30.6	46.0	30.4	45.7	87.3	131	68.6	103	60.5	91.0
Z_x, in.^{3}		23.9		19.0		17.4		113		107		82.0	
L_p, ft		2.38		2.25		2.20		6.90		6.89		6.68	
L_y, ft		3.30		3.04		2.95		18.9		18.9		14.4	
L_r, ft		18.3		16.0		15.4		155		154		113	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W10

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W10×											
		60		54		49		45		39		33	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6									80.2	121	70.5	106
	7	108	163			90.5	136	91.4	137	75.0	113	66.2	99.5
	8	103	154	98.0	147	89.5	134	81.4	122	65.7	98.7	57.9	87.1
	9	91.4	137	88.6	133	79.5	120	72.3	109	58.4	87.7	51.5	77.4
	10	82.2	124	79.7	120	71.6	108	65.1	97.8	52.5	78.9	46.3	69.7
	11	74.7	112	72.5	109	65.1	97.8	59.2	88.9	47.8	71.8	42.1	63.3
	12	68.5	103	66.4	99.8	59.6	89.6	54.2	81.5	43.8	65.8	38.6	58.0
	13	63.2	95.1	61.3	92.2	55.1	82.7	50.1	75.2	40.4	60.7	35.7	53.6
	14	58.7	88.3	56.9	85.6	51.1	76.8	46.5	69.9	37.5	56.4	33.1	49.8
	15	54.8	82.4	53.1	79.9	47.7	71.7	43.4	65.2	35.0	52.6	30.9	46.4
	16	51.4	77.2	49.8	74.9	44.7	67.2	40.7	61.1	32.8	49.3	29.0	43.5
	17	48.4	72.7	46.9	70.5	42.1	63.3	38.3	57.5	30.9	46.4	27.3	41.0
	18	45.7	68.7	44.3	66.6	39.8	59.8	36.2	54.3	29.2	43.9	25.7	38.7
	19	43.3	65.0	42.0	63.1	37.7	56.6	34.3	51.5	27.6	41.6	24.4	36.7
	20	41.1	61.8	39.9	59.9	35.8	53.8	32.5	48.9	26.3	39.5	23.2	34.8
	21	39.2	58.8	38.0	57.1	34.1	51.2	31.0	46.6	25.0	37.6	22.1	33.2
	22	37.4	56.2	36.2	54.5	32.5	48.9	29.6	44.5	23.9	35.9	21.1	31.7
	23	35.7	53.7	34.7	52.1	31.1	46.8	28.3	42.5	22.8	34.3	20.2	30.3
	24	34.3	51.5	33.2	49.9	29.8	44.8	27.1	40.8	21.9	32.9	19.3	29.0
	25	32.9	49.4	31.9	47.9	28.6	43.0	26.0	39.1	21.0	31.6	18.5	27.9
	26	31.6	47.5	30.7	46.1	27.5	41.4	25.0	37.6	20.2	30.4	17.8	26.8
	27	30.5	45.8	29.5	44.4	26.5	39.8	24.1	36.2	19.5	29.2	17.2	25.8
	28	29.4	44.1	28.5	42.8	25.6	38.4	23.2	34.9	18.8	28.2	16.6	24.9
	29	28.4	42.6	27.5	41.3	24.7	37.1	22.4	33.7	18.1	27.2	16.0	24.0
	30	27.4	41.2	26.6	39.9	23.9	35.9	21.7	32.6	17.5	26.3	15.4	23.2
	32	25.7	38.6	24.9	37.4	22.4	33.6	20.3	30.6	16.4	24.7	14.5	21.8
	34	24.2	36.3	23.4	35.2	21.1	31.6	19.1	28.8	15.4	23.2	13.6	20.5
	36	22.8	34.3	22.1	33.3	19.9	29.9	18.1	27.2	14.6	21.9	12.9	19.3
	38	21.6	32.5	21.0	31.5	18.8	28.3	17.1	25.7	13.8	20.8	12.2	18.3
	40	20.6	30.9	19.9	30.0	17.9	26.9	16.3	24.5	13.1	19.7	11.6	17.4
	42	19.6	29.4	19.0	28.5	17.0	25.6	15.5	23.3	12.5	18.8	11.0	16.6
	44	18.7	28.1	18.1	27.2	16.3	24.4	14.8	22.2	11.9	17.9	10.5	15.8
	46	17.9	26.9	17.3	26.0	15.6	23.4	14.1	21.3	11.4	17.2	10.1	15.1
	48	17.1	25.7	16.6	25.0	14.9	22.4	13.6	20.4	10.9	16.4	9.66	14.5
	50	16.4	24.7	15.9	24.0	14.3	21.5	13.0	19.6	10.5	15.8	9.27	13.9
	52	15.8	23.8	15.3	23.0	13.8	20.7	12.5	18.8	10.1	15.2	8.91	13.4
	54	15.2	22.9	14.8	22.2	13.3	19.9	12.1	18.1	9.73	14.6	8.58	12.9
	56	14.7	22.1	14.2	21.4	12.8	19.2	11.6	17.5	9.38	14.1	8.28	12.4
	58	14.2	21.3	13.7	20.7	12.3	18.5	11.2	16.9	9.06	13.6	7.99	12.0
	60	13.7	20.6	13.3	20.0	11.9	17.9	10.8	16.3	8.75	13.2	7.72	11.6
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	822	1240	797	1200	716	1080	651	978	525	789	463	697
M_y/Ω_b	$\phi_b M_y$, kip-ft	92.2	139	89.7	135	80.9	122	72.8	109	59.1	88.9	52.4	78.8
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	103	154	99.6	150	89.5	134	81.4	122	65.7	98.7	57.9	87.1
BF_1/Ω_b	$\phi_b BF_1$, kips	1.76	2.65	1.68	2.52	1.68	2.52	1.84	2.76	1.88	2.82	1.78	2.68
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	11.0	16.6	10.8	16.2	10.1	15.2	9.60	14.4	8.51	12.8	7.84	11.8
V_n/Ω_v	$\phi_v V_{nx}$, kips	54.1	81.3	49.0	73.6	45.3	68.0	45.7	68.7	40.1	60.3	35.2	53.0
Z_x, in.^{3}		68.7		66.6		59.8		54.3		43.9		38.7	
L_p, ft		6.62		6.58		6.54		5.24		5.16		5.13	
L_y, ft		12.6		12.5		11.6		9.90		8.63		8.21	
L_r, ft		95.2		94.6		85.4		74.8		60.8		55.7	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W10

Shape		W10×											
		30		26		22		19		17		15	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4					66.0	99.1	64.8	97.4	53.6	80.5	46.0	69.2
	5	84.9	128	66.6	100	61.0	91.7	51.8	77.9	42.9	64.4	36.8	55.3
	6	72.1	108	62.1	93.3	50.8	76.4	43.2	64.9	35.7	53.7	30.7	46.1
	7	61.8	92.9	53.2	80.0	43.6	65.5	37.0	55.6	30.6	46.0	26.3	39.5
	8	54.1	81.3	46.6	70.0	38.1	57.3	32.4	48.7	26.8	40.3	23.0	34.6
	9	48.1	72.2	41.4	62.2	33.9	50.9	28.8	43.3	23.8	35.8	20.5	30.7
	10	43.2	65.0	37.2	56.0	30.5	45.8	25.9	38.9	21.4	32.2	18.4	27.7
	11	39.3	59.1	33.9	50.9	27.7	41.7	23.6	35.4	19.5	29.3	16.7	25.1
	12	36.0	54.2	31.0	46.6	25.4	38.2	21.6	32.5	17.9	26.8	15.3	23.1
	13	33.3	50.0	28.6	43.1	23.5	35.3	19.9	30.0	16.5	24.8	14.2	21.3
	14	30.9	46.4	26.6	40.0	21.8	32.7	18.5	27.8	15.3	23.0	13.1	19.8
	15	28.8	43.3	24.8	37.3	20.3	30.6	17.3	26.0	14.3	21.5	12.3	18.4
	16	27.0	40.6	23.3	35.0	19.1	28.6	16.2	24.3	13.4	20.1	11.5	17.3
	17	25.4	38.2	21.9	32.9	17.9	27.0	15.2	22.9	12.6	18.9	10.8	16.3
	18	24.0	36.1	20.7	31.1	16.9	25.5	14.4	21.6	11.9	17.9	10.2	15.4
	19	22.8	34.2	19.6	29.5	16.1	24.1	13.6	20.5	11.3	17.0	9.69	14.6
	20	21.6	32.5	18.6	28.0	15.2	22.9	13.0	19.5	10.7	16.1	9.20	13.8
	21	20.6	31.0	17.7	26.7	14.5	21.8	12.3	18.5	10.2	15.3	8.76	13.2
	22	19.7	29.5	16.9	25.4	13.9	20.8	11.8	17.7	9.74	14.6	8.37	12.6
	23	18.8	28.3	16.2	24.3	13.3	19.9	11.3	16.9	9.32	14.0	8.00	12.0
	24	18.0	27.1	15.5	23.3	12.7	19.1	10.8	16.2	8.93	13.4	7.67	11.5
	25	17.3	26.0	14.9	22.4	12.2	18.3	10.4	15.6	8.57	12.9	7.36	11.1
	26	16.6	25.0	14.3	21.5	11.7	17.6	9.97	15.0	8.24	12.4	7.08	10.6
	27	16.0	24.1	13.8	20.7	11.3	17.0	9.60	14.4	7.94	11.9	6.82	10.2
	28	15.4	23.2	13.3	20.0	10.9	16.4	9.25	13.9	7.65	11.5	6.57	9.88
	29	14.9	22.4	12.8	19.3	10.5	15.8	8.93	13.4	7.39	11.1	6.35	9.54
	30	14.4	21.7	12.4	18.7	10.2	15.3	8.64	13.0	7.14	10.7	6.14	9.22
	32	13.5	20.3	11.6	17.5	9.53	14.3	8.10	12.2	6.70	10.1	5.75	8.64
	34	12.7	19.1	11.0	16.5	8.97	13.5	7.62	11.5	6.30	9.47	5.41	8.14
	36	12.0	18.1	10.3	15.5	8.47	12.7	7.20	10.8	5.95	8.95	5.11	7.68
	38	11.4	17.1	9.80	14.7	8.03	12.1	6.82	10.2	5.64	8.48	4.84	7.28
	40	10.8	16.3	9.31	14.0	7.62	11.5	6.48	9.74	5.36	8.05	4.60	6.92
	42	10.3	15.5	8.87	13.3	7.26	10.9	6.17	9.27	5.10	7.67	4.38	6.59
	44	9.83	14.8	8.46	12.7	6.93	10.4	5.89	8.85	4.87	7.32	4.18	6.29
	46	9.40	14.1	8.10	12.2	6.63	9.96	5.63	8.47	4.66	7.00	4.00	6.01
	48	9.01	13.5	7.76	11.7	6.35	9.55	5.40	8.11	4.46	6.71	3.83	5.76
	50	8.65	13.0	7.45	11.2	6.10	9.17	5.18	7.79	4.29	6.44	3.68	5.53
	52	8.32	12.5	7.16	10.8	5.86	8.81	4.98	7.49	4.12	6.19	3.54	5.32
	54	8.01	12.0	6.90	10.4	5.65	8.49	4.80	7.21	3.97	5.96	3.41	5.12
	56	7.72	11.6	6.65	10.0	5.45	8.18	4.63	6.95	3.83	5.75	3.29	4.94
	58	7.46	11.2	6.42	9.65	5.26	7.90	4.47	6.71	3.69	5.55	3.17	4.77
	60	7.21	10.8	6.21	9.33	5.08	7.64	4.32	6.49	3.57	5.37	3.07	4.61
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	432	650	372	560	305	458	259	389	214	322	184	277
M_y/Ω_b	$\phi_b M_y$, kip-ft	47.8	71.9	41.7	62.6	33.9	51.0	28.2	42.5	23.1	34.7	19.6	29.4
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	54.1	81.3	46.6	70.0	38.1	57.3	32.4	48.7	26.8	40.3	23.0	34.6
BF_1/Ω_b	$\phi_b BF_1$, kips	2.71	4.08	2.43	3.65	2.61	3.93	3.29	4.95	3.59	5.40	3.72	5.59
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	8.07	12.1	7.33	11.0	6.45	9.70	5.97	8.97	5.24	7.87	4.62	6.94
V_n/Ω_v	$\phi_v V_{nx}$, kips	42.4	63.8	33.3	50.1	33.0	49.6	33.0	49.6	32.7	49.1	32.3	48.6
Z_x, in.^{3}		36.1		31.1		25.5		21.6		17.9		15.4	
L_p, ft		3.67		3.66		3.56		2.46		2.37		2.29	
L_y, ft		5.96		5.67		5.17		3.72		3.40		3.22	
L_r, ft		41.0		37.2		31.1		23.7		20.1		18.4	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W10–W8

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W10×		W8×									
		12		67		58		48		40		35	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4	37.1	55.7										
	5	29.6	44.6			113	170						
	6	24.7	37.1	130	196	112	168	90.2	135	74.7	112	65.6	98.7
	7	21.2	31.8	125	188	95.6	144	77.5	116	67.1	101	59.1	88.8
	8	18.5	27.8	109	164	83.7	126	67.8	102	58.7	88.2	51.7	77.7
	9	16.5	24.8	97.3	146	74.4	112	60.3	90.6	52.2	78.4	45.9	69.0
	10	14.8	22.3	87.5	132	66.9	101	54.3	81.5	46.9	70.6	41.3	62.1
	11	13.5	20.3	79.6	120	60.8	91.5	49.3	74.1	42.7	64.1	37.6	56.5
	12	12.4	18.6	73.0	110	55.8	83.8	45.2	68.0	39.1	58.8	34.5	51.8
	13	11.4	17.1	67.3	101	51.5	77.4	41.7	62.7	36.1	54.3	31.8	47.8
	14	10.6	15.9	62.5	94.0	47.8	71.9	38.8	58.2	33.5	50.4	29.5	44.4
	15	9.88	14.9	58.4	87.7	44.6	67.1	36.2	54.4	31.3	47.0	27.6	41.4
	16	9.26	13.9	54.7	82.2	41.8	62.9	33.9	51.0	29.3	44.1	25.8	38.8
	17	8.72	13.1	51.5	77.4	39.4	59.2	31.9	48.0	27.6	41.5	24.3	36.6
	18	8.24	12.4	48.6	73.1	37.2	55.9	30.1	45.3	26.1	39.2	23.0	34.5
	19	7.80	11.7	46.1	69.3	35.2	52.9	28.6	42.9	24.7	37.1	21.8	32.7
	20	7.41	11.1	43.8	65.8	33.5	50.3	27.1	40.8	23.5	35.3	20.7	31.1
	21	7.06	10.6	41.7	62.7	31.9	47.9	25.8	38.8	22.4	33.6	19.7	29.6
	22	6.74	10.1	39.8	59.8	30.4	45.7	24.7	37.1	21.3	32.1	18.8	28.2
	23	6.44	9.69	38.1	57.2	29.1	43.7	23.6	35.5	20.4	30.7	18.0	27.0
	24	6.18	9.28	36.5	54.8	27.9	41.9	22.6	34.0	19.6	29.4	17.2	25.9
	25	5.93	8.91	35.0	52.6	26.8	40.2	21.7	32.6	18.8	28.2	16.5	24.9
	26	5.70	8.57	33.7	50.6	25.7	38.7	20.9	31.4	18.1	27.1	15.9	23.9
	27	5.49	8.25	32.4	48.7	24.8	37.3	20.1	30.2	17.4	26.1	15.3	23.0
	28	5.29	7.96	31.3	47.0	23.9	35.9	19.4	29.1	16.8	25.2	14.8	22.2
	29	5.11	7.68	30.2	45.4	23.1	34.7	18.7	28.1	16.2	24.3	14.3	21.4
	30	4.94	7.43	29.2	43.9	22.3	33.5	18.1	27.2	15.6	23.5	13.8	20.7
	32	4.63	6.96	27.4	41.1	20.9	31.4	17.0	25.5	14.7	22.1	12.9	19.4
	34	4.36	6.55	25.7	38.7	19.7	29.6	16.0	24.0	13.8	20.8	12.2	18.3
	36	4.12	6.19	24.3	36.6	18.6	27.9	15.1	22.7	13.0	19.6	11.5	17.3
	38	3.90	5.86	23.0	34.6	17.6	26.5	14.3	21.5	12.4	18.6	10.9	16.4
	40	3.71	5.57	21.9	32.9	16.7	25.2	13.6	20.4	11.7	17.6	10.3	15.5
	42	3.53	5.30	20.8	31.3	15.9	24.0	12.9	19.4	11.2	16.8	9.84	14.8
	44	3.37	5.06	19.9	29.9	15.2	22.9	12.3	18.5	10.7	16.0	9.40	14.1
	46	3.22	4.84	19.0	28.6	14.6	21.9	11.8	17.7	10.2	15.3	8.99	13.5
	48	3.09	4.64	18.2	27.4	13.9	21.0	11.3	17.0	9.78	14.7	8.61	12.9
	50	2.96	4.46	17.5	26.3	13.4	20.1	10.9	16.3	9.39	14.1	8.27	12.4
	52	2.85	4.28	16.8	25.3	12.9	19.3	10.4	15.7	9.03	13.6	7.95	12.0
	54	2.75	4.13	16.2	24.4	12.4	18.6	10.0	15.1	8.69	13.1	7.66	11.5
	56	2.65	3.98	15.6	23.5	12.0	18.0	9.69	14.6	8.38	12.6	7.38	11.1
	58	2.56	3.84	15.1	22.7	11.5	17.3	9.35	14.1	8.09	12.2	7.13	10.7
	60	2.47	3.71	14.6	21.9	11.2	16.8	9.04	13.6	7.82	11.8	6.89	10.4
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	148	223	875	1320	669	1010	543	815	469	706	413	621
M_y/Ω_b	$\phi_b M_y$, kip-ft	16.1	24.2	93.9	141	73.1	110	60.1	90.3	52.4	78.8	46.5	69.8
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	18.5	27.8	109	164	83.7	126	67.8	102	58.7	88.2	51.7	77.7
BF_1/Ω_b	$\phi_b BF_1$, kips	3.00	4.51	1.20	1.80	1.24	1.86	1.20	1.81	1.12	1.69	1.10	1.66
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	3.99	6.00	9.25	13.9	8.14	12.2	7.23	10.9	6.57	9.87	6.10	9.17
V_n/Ω_v	$\phi_v V_{nx}$, kips	20.3	30.4	65.2	98.0	56.6	85.1	45.1	67.7	37.3	56.1	32.8	49.3
Z_x, in.^{3}		12.4		73.1		55.9		45.3		39.2		34.5	
L_p, ft		2.32		5.63		5.47		5.35		5.32		5.26	
L_y, ft		3.13		18.6		14.0		11.8		10.9		10.0	
L_r, ft		16.5		153		113		93.5		84.7		75.7	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

W8

Shape		W8×											
		31		28		24		21		18		15	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4							53.5	80.5	49.1	73.8	39.9	59.9
	5			58.4	87.7	51.3	77.1	49.1	73.7	39.3	59.0	31.9	47.9
	6	57.9	87.1	51.9	78.0	46.3	69.6	40.9	61.4	32.7	49.2	26.6	39.9
	7	52.5	79.0	44.5	66.8	39.7	59.7	35.0	52.7	28.0	42.1	22.8	34.2
	8	46.0	69.1	38.9	58.5	34.7	52.2	30.7	46.1	24.5	36.9	19.9	30.0
	9	40.9	61.4	34.6	52.0	30.9	46.4	27.3	41.0	21.8	32.8	17.7	26.6
	10	36.8	55.3	31.1	46.8	27.8	41.8	24.5	36.9	19.6	29.5	15.9	24.0
	11	33.4	50.3	28.3	42.5	25.3	38.0	22.3	33.5	17.8	26.8	14.5	21.8
	12	30.6	46.1	25.9	39.0	23.2	34.8	20.4	30.7	16.4	24.6	13.3	20.0
	13	28.3	42.5	23.9	36.0	21.4	32.1	18.9	28.4	15.1	22.7	12.3	18.4
	14	26.3	39.5	22.2	33.4	19.8	29.8	17.5	26.3	14.0	21.1	11.4	17.1
	15	24.5	36.9	20.7	31.2	18.5	27.8	16.4	24.6	13.1	19.7	10.6	16.0
	16	23.0	34.5	19.4	29.2	17.4	26.1	15.3	23.0	12.3	18.4	9.96	15.0
	17	21.6	32.5	18.3	27.5	16.3	24.6	14.4	21.7	11.5	17.4	9.38	14.1
	18	20.4	30.7	17.3	26.0	15.4	23.2	13.6	20.5	10.9	16.4	8.86	13.3
	19	19.4	29.1	16.4	24.6	14.6	22.0	12.9	19.4	10.3	15.5	8.39	12.6
	20	18.4	27.6	15.6	23.4	13.9	20.9	12.3	18.4	9.81	14.8	7.97	12.0
	21	17.5	26.3	14.8	22.3	13.2	19.9	11.7	17.6	9.35	14.0	7.59	11.4
	22	16.7	25.1	14.1	21.3	12.6	19.0	11.2	16.8	8.92	13.4	7.25	10.9
	23	16.0	24.0	13.5	20.3	12.1	18.2	10.7	16.0	8.53	12.8	6.93	10.4
	24	15.3	23.0	13.0	19.5	11.6	17.4	10.2	15.4	8.18	12.3	6.64	9.98
	25	14.7	22.1	12.4	18.7	11.1	16.7	9.81	14.7	7.85	11.8	6.38	9.58
	26	14.1	21.3	12.0	18.0	10.7	16.1	9.43	14.2	7.55	11.3	6.13	9.22
	27	13.6	20.5	11.5	17.3	10.3	15.5	9.09	13.7	7.27	10.9	5.90	8.87
	28	13.1	19.7	11.1	16.7	9.92	14.9	8.76	13.2	7.01	10.5	5.69	8.56
	29	12.7	19.1	10.7	16.1	9.58	14.4	8.46	12.7	6.77	10.2	5.50	8.26
	30	12.3	18.4	10.4	15.6	9.26	13.9	8.18	12.3	6.54	9.83	5.31	7.99
	32	11.5	17.3	9.72	14.6	8.68	13.1	7.67	11.5	6.13	9.22	4.98	7.49
	34	10.8	16.3	9.15	13.8	8.17	12.3	7.21	10.8	5.77	8.68	4.69	7.05
	36	10.2	15.4	8.64	13.0	7.72	11.6	6.81	10.2	5.45	8.20	4.43	6.66
	38	9.68	14.5	8.19	12.3	7.31	11.0	6.46	9.70	5.17	7.76	4.20	6.31
	40	9.19	13.8	7.78	11.7	6.95	10.4	6.13	9.22	4.91	7.38	3.99	5.99
	42	8.76	13.2	7.41	11.1	6.62	9.94	5.84	8.78	4.67	7.02	3.80	5.70
	44	8.36	12.6	7.07	10.6	6.31	9.49	5.58	8.38	4.46	6.71	3.62	5.45
	46	7.99	12.0	6.77	10.2	6.04	9.08	5.33	8.02	4.27	6.41	3.47	5.21
	48	7.66	11.5	6.48	9.74	5.79	8.70	5.11	7.68	4.09	6.15	3.32	4.99
	50	7.36	11.1	6.22	9.35	5.56	8.35	4.91	7.37	3.93	5.90	3.19	4.79
	52	7.07	10.6	5.98	8.99	5.34	8.03	4.72	7.09	3.77	5.67	3.07	4.61
	54	6.81	10.2	5.76	8.66	5.15	7.73	4.54	6.83	3.64	5.46	2.95	4.44
	56	6.57	9.87	5.56	8.35	4.96	7.46	4.38	6.58	3.51	5.27	2.85	4.28
	58	6.34	9.53	5.37	8.06	4.79	7.20	4.23	6.36	3.38	5.09	2.75	4.13
	60	6.13	9.21	5.19	7.80	4.63	6.96	4.09	6.14	3.27	4.92	2.66	3.99
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	368	553	311	468	278	418	245	369	196	295	159	240
M_y/Ω_b	$\phi_b M_y$, kip-ft	41.6	62.5	34.9	52.4	31.3	47.1	27.3	41.1	21.8	32.7	17.4	26.1
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	46.0	69.1	38.9	58.5	34.7	52.2	30.7	46.1	24.5	36.9	19.9	30.0
BF_1/Ω_b	$\phi_b BF_1$, kips	1.07	1.61	1.22	1.84	1.17	1.76	1.51	2.27	1.62	2.44	1.98	2.97
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	5.69	8.55	5.20	7.82	4.84	7.28	4.71	7.08	4.08	6.14	3.63	5.45
V_n/Ω_v	$\phi_v V_{nx}$, kips	29.0	43.5	29.2	43.9	25.6	38.5	26.8	40.2	26.3	39.6	26.2	39.4
Z_x, in.^{3}		30.7		26.0		23.2		20.5		16.4		13.3	
L_p, ft		5.24		4.24		4.21		3.36		3.27		2.45	
L_y, ft		9.34		7.54		7.13		5.57		4.97		3.75	
L_r, ft		68.6		55.2		50.6		38.9		31.9		24.3	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W8–W6

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		W8×				W6×							
		13		10		25		20		16		15[f1]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	51.7	77.7										
	3	44.9	67.5	36.3	54.6					40.6	61.0	34.1	51.2
	4	33.7	50.6	27.3	41.1	51.6	77.5	40.1	60.3	34.6	52.0	28.4	42.7
	5	26.9	40.5	21.9	32.9	44.5	66.9	35.9	54.0	27.7	41.6	22.7	34.1
	6	22.4	33.7	18.2	27.4	37.1	55.7	30.0	45.0	23.1	34.7	18.9	28.4
	7	19.2	28.9	15.6	23.5	31.8	47.8	25.7	38.6	19.8	29.7	16.2	24.4
	8	16.8	25.3	13.7	20.5	27.8	41.8	22.5	33.8	17.3	26.0	14.2	21.3
	9	15.0	22.5	12.1	18.3	24.7	37.1	20.0	30.0	15.4	23.1	12.6	19.0
	10	13.5	20.2	10.9	16.4	22.2	33.4	18.0	27.0	13.8	20.8	11.4	17.1
	11	12.2	18.4	9.94	14.9	20.2	30.4	16.3	24.6	12.6	18.9	10.3	15.5
	12	11.2	16.9	9.11	13.7	18.5	27.9	15.0	22.5	11.5	17.3	9.46	14.2
	13	10.4	15.6	8.41	12.6	17.1	25.7	13.8	20.8	10.7	16.0	8.73	13.1
	14	9.62	14.5	7.81	11.7	15.9	23.9	12.8	19.3	9.89	14.9	8.11	12.2
	15	8.98	13.5	7.29	11.0	14.8	22.3	12.0	18.0	9.23	13.9	7.57	11.4
	16	8.42	12.7	6.83	10.3	13.9	20.9	11.2	16.9	8.65	13.0	7.09	10.7
	17	7.92	11.9	6.43	9.66	13.1	19.7	10.6	15.9	8.15	12.2	6.68	10.0
	18	7.48	11.2	6.07	9.13	12.4	18.6	9.98	15.0	7.69	11.6	6.31	9.48
	19	7.09	10.7	5.75	8.65	11.7	17.6	9.46	14.2	7.29	11.0	5.97	8.98
	20	6.73	10.1	5.46	8.21	11.1	16.7	8.99	13.5	6.92	10.4	5.68	8.53
	21	6.41	9.64	5.20	7.82	10.6	15.9	8.56	12.9	6.59	9.91	5.41	8.12
	22	6.12	9.20	4.97	7.47	10.1	15.2	8.17	12.3	6.29	9.46	5.16	7.75
	23	5.86	8.80	4.75	7.14	9.67	14.5	7.81	11.7	6.02	9.05	4.94	7.42
	24	5.61	8.43	4.55	6.84	9.27	13.9	7.49	11.3	5.77	8.67	4.73	7.11
	25	5.39	8.10	4.37	6.57	8.90	13.4	7.19	10.8	5.54	8.32	4.54	6.82
	26	5.18	7.79	4.20	6.32	8.56	12.9	6.91	10.4	5.33	8.00	4.37	6.56
	27	4.99	7.50	4.05	6.08	8.24	12.4	6.66	10.0	5.13	7.71	4.20	6.32
	28	4.81	7.23	3.90	5.87	7.94	11.9	6.42	9.65	4.95	7.43	4.05	6.09
	29	4.64	6.98	3.77	5.66	7.67	11.5	6.20	9.31	4.77	7.18	3.91	5.88
	30	4.49	6.75	3.64	5.48	7.41	11.1	5.99	9.00	4.62	6.94	3.78	5.69
	32	4.21	6.33	3.42	5.13	6.95	10.4	5.62	8.44	4.33	6.50	3.55	5.33
	34	3.96	5.95	3.21	4.83	6.54	9.83	5.29	7.94	4.07	6.12	3.34	5.02
	36	3.74	5.62	3.04	4.56	6.18	9.29	4.99	7.50	3.85	5.78	3.15	4.74
	38	3.54	5.33	2.88	4.32	5.85	8.80	4.73	7.11	3.64	5.48	2.99	4.49
	40	3.37	5.06	2.73	4.11	5.56	8.36	4.49	6.75	3.46	5.20	2.84	4.27
	42	3.21	4.82	2.60	3.91	5.30	7.96	4.28	6.43	3.30	4.96	2.70	4.06
	44	3.06	4.60	2.48	3.73	5.06	7.60	4.08	6.14	3.15	4.73	2.58	3.88
	46	2.93	4.40	2.38	3.57	4.84	7.27	3.91	5.87	3.01	4.52	2.47	3.71
	48	2.81	4.22	2.28	3.42	4.63	6.97	3.74	5.63	2.88	4.34	2.36	3.55
	50	2.69	4.05	2.19	3.29	4.45	6.69	3.59	5.40	2.77	4.16	2.27	3.41
	52	2.59	3.89	2.10	3.16	4.28	6.43	3.46	5.19	2.66	4.00	2.18	3.28
	54	2.49	3.75	2.02	3.04	4.12	6.19	3.33	5.00	2.56	3.85	2.10	3.16
	56	2.41	3.61	1.95	2.93	3.97	5.97	3.21	4.82	2.47	3.72	2.03	3.05
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	135	202	109	164	222	334	180	270	138	208	114	171
M_y/Ω_b	$\phi_b M_y$, kip-ft	14.5	21.8	12.0	18.1	24.6	37.0	20.1	30.3	15.2	22.9	13.9	20.8
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	16.8	25.3	13.7	20.5	27.8	41.8	22.5	33.8	17.3	26.0	14.2	21.3
BF_1/Ω_b	$\phi_b BF_1$, kips	2.05	3.08	1.75	2.62	0.694	1.04	0.663	0.997	0.820	1.23	0.679	1.02
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	3.18	4.78	2.81	4.23	3.38	5.08	2.98	4.48	2.58	3.88	2.36	3.55
V_n/Ω_v	$\phi_v V_{nx}$, kips	25.8	38.8	18.2	27.3	25.8	38.8	20.0	30.1	20.3	30.5	17.0	25.6
Z_x, in.^{3}		11.2		9.13		18.6		15.0		11.6		10.3	
L_p, ft		2.37		2.37		3.99		3.94		2.61		3.82	
L_y, ft		3.51		3.32		8.56		7.43		5.16		6.02	
L_r, ft		21.7		18.8		67.4		56.0		39.7		40.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f1] Shape exceeds compact limit for flexure with $F_y = 30$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-5 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W6–W4

Shape		W6×				W5×				W4×	
		12		9		19		16		13	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	34.3	51.6	27.2	40.9					30.1	45.3
	3	32.3	48.5	25.0	37.5	37.3	56.1	32.4	48.7	25.0	37.5
	4	24.2	36.4	18.7	28.1	33.2	49.9	27.9	41.9	18.7	28.1
	5	19.4	29.1	15.0	22.5	26.6	39.9	22.3	33.5	15.0	22.5
	6	16.1	24.3	12.5	18.8	22.1	33.3	18.6	27.9	12.5	18.8
	7	13.8	20.8	10.7	16.1	19.0	28.5	15.9	24.0	10.7	16.1
	8	12.1	18.2	9.36	14.1	16.6	24.9	13.9	21.0	9.36	14.1
	9	10.8	16.2	8.32	12.5	14.8	22.2	12.4	18.6	8.32	12.5
	10	9.68	14.6	7.49	11.3	13.3	20.0	11.2	16.8	7.49	11.3
	11	8.80	13.2	6.81	10.2	12.1	18.1	10.1	15.2	6.81	10.2
	12	8.07	12.1	6.24	9.38	11.1	16.6	9.30	14.0	6.24	9.38
	13	7.45	11.2	5.76	8.66	10.2	15.4	8.58	12.9	5.76	8.66
	14	6.92	10.4	5.35	8.04	9.48	14.3	7.97	12.0	5.35	8.04
	15	6.46	9.70	4.99	7.51	8.85	13.3	7.44	11.2	4.99	7.50
	16	6.05	9.10	4.68	7.04	8.30	12.5	6.97	10.5	4.68	7.03
	17	5.70	8.56	4.41	6.62	7.81	11.7	6.56	9.86	4.40	6.62
	18	5.38	8.09	4.16	6.25	7.38	11.1	6.20	9.32	4.16	6.25
	19	5.10	7.66	3.94	5.93	6.99	10.5	5.87	8.83	3.94	5.92
	20	4.84	7.28	3.75	5.63	6.64	9.98	5.58	8.38	3.74	5.63
	21	4.61	6.93	3.57	5.36	6.32	9.50	5.31	7.99	3.57	5.36
	22	4.40	6.62	3.40	5.12	6.04	9.07	5.07	7.62	3.40	5.12
	23	4.21	6.33	3.26	4.89	5.77	8.68	4.85	7.29	3.26	4.89
	24	4.03	6.06	3.12	4.69	5.53	8.32	4.65	6.99	3.12	4.69
	25	3.87	5.82	3.00	4.50	5.31	7.98	4.46	6.71	2.99	4.50
	26	3.72	5.60	2.88	4.33	5.11	7.68	4.29	6.45	2.88	4.33
	27	3.59	5.39	2.77	4.17	4.92	7.39	4.13	6.21	2.77	4.17
	28	3.46	5.20	2.68	4.02	4.74	7.13	3.98	5.99	2.67	4.02
	29	3.34	5.02	2.58	3.88	4.58	6.88	3.85	5.78	2.58	3.88
	30	3.23	4.85	2.50	3.75	4.43	6.65	3.72	5.59	2.50	3.75
	32	3.03	4.55	2.34	3.52	4.15	6.24	3.49	5.24	2.34	3.52
	34	2.85	4.28	2.20	3.31	3.91	5.87	3.28	4.93	2.20	3.31
	36	2.69	4.04	2.08	3.13	3.69	5.54	3.10	4.66	2.08	3.13
	38	2.55	3.83	1.97	2.96	3.49	5.25	2.94	4.41	1.97	2.96
	40	2.42	3.64	1.87	2.81	3.32	4.99	2.79	4.19	1.87	2.81
	42	2.31	3.47	1.78	2.68	3.16	4.75	2.66	3.99	1.78	2.68
	44	2.20	3.31	1.70	2.56	3.02	4.54	2.54	3.81	1.70	2.56
	46	2.11	3.16	1.63	2.45	2.89	4.34	2.43	3.65	1.63	2.45
	48	2.02	3.03	1.56	2.35	2.77	4.16	2.32	3.49	1.56	2.34
	50	1.94	2.91	1.50	2.25	2.66	3.99	2.23	3.35	1.50	2.25
	52	1.86	2.80	1.44	2.17	2.55	3.84	2.15	3.22	1.44	2.16
	54	1.79	2.70	1.39	2.08	2.46	3.70	2.07	3.11	1.39	2.08
	56	1.73	2.60	1.34	2.01	2.37	3.56	1.99	2.99	1.34	2.01
Beam Properties											
W_c/Ω_b	$\phi_b W_c$, kip-ft	96.8	146	74.9	113	133	200	112	168	74.9	113
M_y/Ω_b	$\phi_b M_y$, kip-ft	10.7	16.1	8.33	12.5	14.6	21.9	12.4	18.6	8.14	12.2
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	12.1	18.2	9.36	14.1	16.6	24.9	13.9	21.0	9.36	14.1
BF_1/Ω_b	$\phi_b BF_1$, kips	0.867	1.30	0.834	1.25	0.432	0.649	0.422	0.635	0.285	0.428
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	2.07	3.12	1.77	2.66	2.04	3.07	1.84	2.77	1.20	1.80
V_n/Ω_v	$\phi_v V_{nx}$, kips	17.2	25.8	13.6	20.4	18.7	28.0	16.2	24.3	15.1	22.6
Z_x, in.^{3}		8.09		6.25		11.1		9.32		6.25	
L_p, ft		2.51		2.45		3.33		3.29		2.68	
L_y, ft		4.15		3.69		7.95		7.01		6.96	
L_r, ft		28.8		23.4		63.9		55.1		56.5	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-5 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W24

Table 7-6
Maximum Total Uniform Load, kips
W-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		W24×											
		146		131		117[f2]		104[f2]		94		84	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	10					642	965						
	11					630	948						
	12	774	1160	771	1160	578	869	536	806			454	683
	13	771	1160	763	1150	533	802	518	778	545	819	430	646
	14	716	1080	708	1060	495	745	481	723	507	762	399	600
	15	668	1000	661	994	462	695	449	675	473	711	373	560
	16	626	941	620	932	433	651	421	632	444	667	349	525
	17	590	886	583	877	408	613	396	595	417	627	329	494
	18	557	837	551	828	385	579	374	562	394	593	311	467
	19	527	793	522	785	365	549	354	533	374	561	294	442
	20	501	753	496	745	347	521	337	506	355	533	279	420
	21	477	717	472	710	330	496	321	482	338	508	266	400
	22	456	685	451	678	315	474	306	460	323	485	254	382
	23	436	655	431	648	302	453	293	440	309	464	243	365
	24	418	628	413	621	289	434	281	422	296	444	233	350
	25	401	603	397	596	277	417	269	405	284	427	224	336
	26	385	579	381	573	267	401	259	389	273	410	215	323
	27	371	558	367	552	257	386	249	375	263	395	207	311
	28	358	538	354	532	248	372	240	361	253	381	200	300
	29	346	519	342	514	239	359	232	349	245	368	193	290
	30	334	502	331	497	231	347	224	337	237	356	186	280
	32	313	471	310	466	217	326	210	316	222	333	175	263
	34	295	443	292	438	204	307	198	298	209	314	164	247
	36	278	418	276	414	193	290	187	281	197	296	155	233
	38	264	396	261	392	182	274	177	266	187	281	147	221
	40	251	377	248	373	173	261	168	253	177	267	140	210
	42	239	359	236	355	165	248	160	241	169	254	133	200
	44	228	342	225	339	158	237	153	230	161	242	127	191
	46	218	327	216	324	151	227	146	220	154	232	122	183
	48	209	314	207	311	144	217	140	211	148	222	116	175
	50	200	301	198	298	139	208	135	202	142	213	112	168
	52	193	290	191	287	133	200	129	195	136	205	107	162
	54	186	279	184	276	128	193	125	187	131	198	104	156
	56	179	269	177	266	124	186	120	181	127	190	99.8	150
	58	173	260	171	257	120	180	116	174	122	184	96.4	145
	60	167	251	165	248	116	174	112	169	118	178	93.2	140
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	10000	15100	9920	14900	6930	10400	6730	10100	7100	10700	5590	8400
M_y/Ω_b	$\phi_b M_y$, kip-ft	1110	1670	1100	1650	859	1290	834	1250	781	1170	613	921
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	1250	1880	1240	1860	867	1300	842	1260	887	1330	699	1050
BF_1/Ω_b	$\phi_b BF_1$, kips	46.1	69.3	44.7	67.2	41.4	62.3	37.4	56.2	50.0	75.1	46.8	70.3
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	189	284	187	281	155	234	151	227	155	232	129	194
V_n/Ω_v	$\phi_v V_{nx}$, kips	387	582	386	580	321	483	268	403	273	410	227	341
Z_x, in.^{3}		386		382		299		288		273		215	
L_p, ft		6.82		6.82		6.62		6.68		4.75		4.61	
L_y, ft		9.91		9.93		9.29		9.36		6.88		6.44	
L_r, ft		44.2		44.4		38.7		38.7		30.4		26.5	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-6 (continued)
Maximum Total Uniform Load, kips
W-Shapes (Welded)

W24–W21

Shape		W24×								W21×			
		76		68[f2]		62		55[f2]		122		111	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	8							383	576				
	9					448	674	374	563				
	10			385	578	411	617	337	506				
	11			363	546	373	561	306	460	730	1100		
	12	453	680	333	500	342	514	281	422	686	1030	617	927
	13	424	638	307	462	316	475	259	390	633	952	610	916
	14	394	592	285	429	293	441	241	362	588	884	566	851
	15	368	553	266	400	274	411	225	338	549	825	528	794
	16	345	518	250	375	257	386	211	317	515	773	495	744
	17	324	488	235	353	242	363	198	298	484	728	466	701
	18	306	460	222	333	228	343	187	281	457	688	440	662
	19	290	436	210	316	216	325	177	267	433	651	417	627
	20	276	414	200	300	205	309	168	253	412	619	396	596
	21	263	395	190	286	196	294	160	241	392	589	377	567
	22	251	377	182	273	187	280	153	230	374	563	360	541
	23	240	360	174	261	179	268	146	220	358	538	345	518
	24	230	345	166	250	171	257	140	211	343	516	330	496
	25	221	332	160	240	164	247	135	203	329	495	317	476
	26	212	319	154	231	158	237	130	195	317	476	305	458
	27	204	307	148	222	152	229	125	188	305	458	293	441
	28	197	296	143	214	147	220	120	181	294	442	283	425
	29	190	286	138	207	142	213	116	175	284	427	273	411
	30	184	276	133	200	137	206	112	169	274	413	264	397
	32	172	259	125	188	128	193	105	158	257	387	248	372
	34	162	244	117	177	121	181	99.1	149	242	364	233	350
	36	153	230	111	167	114	171	93.6	141	229	344	220	331
	38	145	218	105	158	108	162	88.7	133	217	326	209	313
	40	138	207	99.8	150	103	154	84.2	127	206	309	198	298
	42	131	197	95.1	143	97.8	147	80.2	121	196	295	189	284
	44	125	188	90.8	136	93.3	140	76.6	115	187	281	180	271
	46	120	180	86.8	130	89.3	134	73.2	110	179	269	172	259
	48	115	173	83.2	125	85.5	129	70.2	106	172	258	165	248
	50	110	166	79.9	120	82.1	123	67.4	101	165	248	158	238
	52	106	159	76.8	115	79.0	119	64.8	97.4	158	238	152	229
	54	102	153	74.0	111	76.0	114	62.4	93.8	152	229	147	221
	56	98.5	148	71.3	107	73.3	110	60.2	90.4	147	221	142	213
	58	95.1	143	68.9	103	70.8	106	58.1	87.3	142	213	137	205
	60	91.9	138	66.6	100	68.4	103	56.2	84.4	137	206	132	199
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	5510	8290	3990	6000	4110	6170	3370	5060	8230	12400	7920	11900
M_y/Ω_b	$\phi_b M_y$, kip-ft	605	909	476	715	437	657	365	549	914	1370	885	1330
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	689	1040	499	750	513	771	421	633	1030	1550	991	1490
BF_1/Ω_b	$\phi_b BF_1$, kips	46.1	69.3	42.7	64.1	58.2	87.5	54.7	82.3	35.2	52.9	32.5	48.8
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	128	192	105	157	105	158	90.9	137	152	228	147	221
V_n/Ω_v	$\phi_v V_{nx}$, kips	226	340	192	289	224	337	191	288	365	548	308	463
Z_x, in.^{3}		213		168		158		133		317		305	
L_p, ft		4.60		4.47		3.42		3.33		6.62		6.61	
L_y, ft		6.43		6.12		4.74		4.55		9.90		9.87	
L_r, ft		26.5		24.2		19.1		17.9		46.5		46.1	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W21

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		W21×											
		101[f2]		93		83		73		68		62	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	9			618	929	511	768			429	644		
	10			590	886	464	698	432	650	390	586	370	555
	11	511	768	536	806	422	635	403	606	354	532	342	514
	12	479	720	491	739	387	582	370	556	325	488	313	471
	13	442	665	454	682	357	537	341	513	300	450	289	435
	14	411	617	421	633	332	499	317	476	278	418	269	404
	15	383	576	393	591	310	465	296	444	260	390	251	377
	16	359	540	369	554	290	436	277	417	244	366	235	353
	17	338	508	347	521	273	411	261	392	229	344	221	332
	18	319	480	328	492	258	388	246	370	216	325	209	314
	19	303	455	310	466	244	367	233	351	205	308	198	297
	20	287	432	295	443	232	349	222	333	195	293	188	283
	21	274	411	281	422	221	332	211	317	186	279	179	269
	22	261	393	268	403	211	317	202	303	177	266	171	257
	23	250	376	256	385	202	303	193	290	169	255	163	246
	24	239	360	246	369	194	291	185	278	162	244	157	235
	25	230	346	236	354	186	279	177	267	156	234	150	226
	26	221	332	227	341	179	268	171	256	150	225	145	217
	27	213	320	218	328	172	259	164	247	144	217	139	209
	28	205	309	211	317	166	249	158	238	139	209	134	202
	29	198	298	203	306	160	241	153	230	134	202	130	195
	30	192	288	197	295	155	233	148	222	130	195	125	188
	32	180	270	184	277	145	218	139	208	122	183	118	177
	34	169	254	173	261	137	205	130	196	115	172	111	166
	36	160	240	164	246	129	194	123	185	108	163	104	157
	38	151	227	155	233	122	184	117	175	103	154	99.0	149
	40	144	216	147	222	116	175	111	167	97.4	146	94.0	141
	42	137	206	140	211	111	166	106	159	92.8	139	89.5	135
	44	131	196	134	201	106	159	101	152	88.6	133	85.5	128
	46	125	188	128	193	101	152	96.4	145	84.7	127	81.7	123
	48	120	180	123	185	96.8	145	92.4	139	81.2	122	78.3	118
	50	115	173	118	177	92.9	140	88.7	133	77.9	117	75.2	113
	52	111	166	113	170	89.3	134	85.3	128	74.9	113	72.3	109
	54	106	160	109	164	86.0	129	82.2	123	72.2	108	69.6	105
	56	103	154	105	158	82.9	125	79.2	119	69.6	105	67.1	101
	58	99.1	149	102	153	80.1	120	76.5	115	67.2	101	64.8	97.4
	60	95.8	144	98.3	148	77.4	116	73.9	111	64.9	97.6	62.7	94.2
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	5750	8640	5900	8860	4640	6980	4440	6670	3900	5860	3760	5650
M_y/Ω_b	$\phi_b M_y$, kip-ft	696	1050	642	966	505	759	486	731	423	636	412	619
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	718	1080	737	1110	581	873	555	833	487	732	470	706
BF_1/Ω_b	$\phi_b BF_1$, kips	30.2	45.3	43.8	65.9	41.8	62.9	38.1	57.2	38.4	57.8	35.4	53.2
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	125	188	126	190	107	161	103	155	92.9	140	90.5	136
V_n/Ω_v	$\phi_v V_{nx}$, kips	256	384	309	464	256	384	216	325	214	322	185	278
Z_x, in.^{3}		240		227		179		171		150		145	
L_p, ft		6.48		4.41		4.27		4.28		4.17		4.19	
L_y, ft		9.21		6.57		6.07		6.07		5.82		5.84	
L_r, ft		39.3		30.6		26.0		25.9		24.0		23.9	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W21–W18

Shape		W21×										W18×	
		57		55[f2]		50		48[f2]		44[f2]		106	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	8	370	556	317	476	317	476	282	423	282	424		
	9	358	539	314	471	297	446	263	395	254	382	655	985
	10	323	485	282	424	267	402	236	355	228	343	627	943
	11	293	441	257	386	243	365	215	323	208	312	570	857
	12	269	404	235	354	223	335	197	296	190	286	523	786
	13	248	373	217	326	206	309	182	273	176	264	483	725
	14	230	346	202	303	191	287	169	254	163	245	448	674
	15	215	323	188	283	178	268	158	237	152	229	418	629
	16	202	303	176	265	167	251	148	222	143	215	392	589
	17	190	285	166	250	157	236	139	209	134	202	369	555
	18	179	269	157	236	149	223	131	197	127	191	349	524
	19	170	255	149	223	141	211	124	187	120	181	330	496
	20	161	242	141	212	134	201	118	178	114	172	314	472
	21	154	231	134	202	127	191	113	169	109	164	299	449
	22	147	220	128	193	122	183	107	162	104	156	285	429
	23	140	211	123	184	116	175	103	155	99.3	149	273	410
	24	134	202	118	177	111	167	98.5	148	95.2	143	261	393
	25	129	194	113	170	107	161	94.6	142	91.4	137	251	377
	26	124	187	109	163	103	155	90.9	137	87.9	132	241	363
	27	119	180	105	157	99.0	149	87.6	132	84.6	127	232	349
	28	115	173	101	152	95.5	144	84.4	127	81.6	123	224	337
	29	111	167	97.3	146	92.2	139	81.5	123	78.8	118	216	325
	30	108	162	94.1	141	89.1	134	78.8	118	76.2	114	209	314
	32	101	152	88.2	133	83.5	126	73.9	111	71.4	107	196	295
	34	94.9	143	83.0	125	78.6	118	69.5	105	67.2	101	185	277
	36	89.6	135	78.4	118	74.3	112	65.7	98.7	63.5	95.4	174	262
	38	84.9	128	74.3	112	70.4	106	62.2	93.5	60.1	90.4	165	248
	40	80.7	121	70.6	106	66.8	100	59.1	88.8	57.1	85.9	157	236
	42	76.8	115	67.2	101	63.7	95.7	56.3	84.6	54.4	81.8	149	225
	44	73.3	110	64.2	96.4	60.8	91.3	53.7	80.8	51.9	78.1	143	214
	46	70.1	105	61.4	92.2	58.1	87.4	51.4	77.3	49.7	74.7	136	205
	48	67.2	101	58.8	88.4	55.7	83.7	49.3	74.0	47.6	71.5	131	196
	50	64.5	97.0	56.5	84.9	53.5	80.4	47.3	71.1	45.7	68.7	125	189
	52	62.0	93.3	54.3	81.6	51.4	77.3	45.5	68.3	43.9	66.0	121	181
	54	59.7	89.8	52.3	78.6	49.5	74.4	43.8	65.8	42.3	63.6	116	175
	56	57.6	86.6	50.4	75.8	47.7	71.8	42.2	63.5	40.8	61.3	112	168
	58	55.6	83.6	48.7	73.1	46.1	69.3	40.8	61.3	39.4	59.2	108	163
	60	53.8	80.8	47.0	70.7	44.6	67.0	39.4	59.2	38.1	57.2	105	157
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	3230	4850	2820	4240	2670	4020	2360	3550	2280	3430	6270	9430
M_y/Ω_b	$\phi_b M_y$, kip-ft	346	521	340	511	286	429	304	457	259	389	693	1040
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	403	606	353	530	334	502	296	444	286	429	784	1180
BF_1/Ω_b	$\phi_b BF_1$, kips	44.3	66.6	32.6	49.1	41.0	61.6	30.7	46.2	38.7	58.1	26.8	40.3
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	84.3	127	77.1	116	71.7	108	70.1	105	66.0	99.2	114	171
V_n/Ω_v	$\phi_v V_{nx}$, kips	185	278	158	238	158	238	141	212	141	212	328	492
Z_x, in.^{3}		124		120		103		108		93.5		242	
L_p, ft		3.26		4.10		3.17		4.04		3.13		6.03	
L_y, ft		4.54		5.64		4.36		5.52		4.28		9.43	
L_r, ft		18.6		22.3		17.3		21.6		16.8		47.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W18

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

Shape		W18×											
		97		86[f2]		76[f2]		71		65		60	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7							479	721				
	8							447	672	408	613		
	9			478	719	349	525	397	597	382	575	352	529
	10	577	867	461	693	344	518	358	538	344	517	331	497
	11	552	829	419	630	313	471	325	489	313	470	301	452
	12	506	760	384	577	287	431	298	448	287	431	276	414
	13	467	702	355	533	265	398	275	413	265	398	255	383
	14	434	652	329	495	246	370	255	384	246	369	236	355
	15	405	608	307	462	230	345	238	358	229	345	221	332
	16	379	570	288	433	215	324	224	336	215	323	207	311
	17	357	537	271	407	203	305	210	316	202	304	195	293
	18	337	507	256	385	191	288	199	299	191	287	184	276
	19	319	480	243	365	181	272	188	283	181	272	174	262
	20	304	456	230	346	172	259	179	269	172	259	165	249
	21	289	434	219	330	164	247	170	256	164	246	158	237
	22	276	415	209	315	157	235	163	244	156	235	150	226
	23	264	397	200	301	150	225	155	234	150	225	144	216
	24	253	380	192	289	144	216	149	224	143	215	138	207
	25	243	365	184	277	138	207	143	215	138	207	132	199
	26	233	351	177	266	132	199	138	207	132	199	127	191
	27	225	338	171	257	128	192	132	199	127	192	123	184
	28	217	326	165	247	123	185	128	192	123	185	118	178
	29	209	315	159	239	119	179	123	185	119	178	114	172
	30	202	304	154	231	115	173	119	179	115	172	110	166
	32	190	285	144	216	108	162	112	168	108	162	103	155
	34	179	268	136	204	101	152	105	158	101	152	97.3	146
	36	169	253	128	192	95.7	144	99.3	149	95.6	144	91.9	138
	38	160	240	121	182	90.6	136	94.1	141	90.5	136	87.1	131
	40	152	228	115	173	86.1	129	89.4	134	86.0	129	82.7	124
	42	145	217	110	165	82.0	123	85.2	128	81.9	123	78.8	118
	44	138	207	105	157	78.3	118	81.3	122	78.2	118	75.2	113
	46	132	198	100	151	74.9	113	77.7	117	74.8	112	71.9	108
	48	126	190	96.0	144	71.8	108	74.5	112	71.7	108	68.9	104
	50	121	182	92.2	139	68.9	104	71.5	108	68.8	103	66.2	99.5
	52	117	175	88.6	133	66.2	99.6	68.8	103	66.2	99.5	63.6	95.6
	54	112	169	85.3	128	63.8	95.9	66.2	99.5	63.7	95.8	61.3	92.1
	56	108	163	82.3	124	61.5	92.4	63.9	96.0	61.4	92.3	59.1	88.8
	58	105	157	79.5	119	59.4	89.3	61.7	92.7	59.3	89.2	57.1	85.8
	60	101	152	76.8	115	57.4	86.3	59.6	89.6	57.3	86.2	55.2	82.9
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	6070	9120	4610	6930	3440	5180	3580	5380	3440	5170	3310	4970
M_y/Ω_b	$\phi_b M_y$, kip-ft	675	1010	528	794	438	658	388	584	377	566	365	548
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	759	1140	576	866	431	647	447	672	430	646	414	622
BF_1/Ω_b	$\phi_b BF_1$, kips	25.1	37.8	23.7	35.6	20.4	30.7	32.3	48.6	29.9	44.9	27.4	41.2
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	111	167	94.8	143	82.4	124	81.9	123	79.8	120	77.2	116
V_n/Ω_v	$\phi_v V_{nx}$, kips	288	433	239	359	175	262	240	360	204	307	176	265
Z_x, in.^{3}		234		183		150		138		133		128	
L_p, ft		6.02		5.90		5.82		3.94		3.95		3.97	
L_y, ft		9.36		8.60		8.24		5.75		5.74		5.76	
L_r, ft		46.7		38.6		34.9		25.9		25.6		25.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength..

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

W18–W16

Shape		W18×										W16×	
		55		50		46		40[f2]		35[f2]		100	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7									222	333		
	8	348	524			272	409	224	337	203	306		
	9	321	482	270	406	262	394	214	322	181	272	534	802
	10	289	434	255	383	236	355	193	290	163	245	514	772
	11	263	395	232	348	215	323	175	263	148	222	467	702
	12	241	362	212	319	197	296	161	241	136	204	428	643
	13	222	334	196	295	182	273	148	223	125	188	395	594
	14	206	310	182	274	169	254	138	207	116	175	367	551
	15	193	289	170	255	157	237	129	193	108	163	342	515
	16	181	271	159	239	148	222	121	181	102	153	321	482
	17	170	255	150	225	139	209	113	170	95.7	144	302	454
	18	161	241	142	213	131	197	107	161	90.4	136	285	429
	19	152	229	134	202	124	187	101	153	85.6	129	270	406
	20	144	217	127	191	118	178	96.4	145	81.3	122	257	386
	21	138	207	121	182	112	169	91.8	138	77.5	116	245	368
	22	131	197	116	174	107	161	87.6	132	73.9	111	233	351
	23	126	189	111	166	103	154	83.8	126	70.7	106	223	336
	24	120	181	106	160	98.4	148	80.3	121	67.8	102	214	322
	25	116	174	102	153	94.5	142	77.1	116	65.1	97.8	205	309
	26	111	167	98.0	147	90.8	137	74.2	111	62.6	94.0	198	297
	27	107	161	94.4	142	87.5	131	71.4	107	60.3	90.6	190	286
	28	103	155	91.0	137	84.4	127	68.9	103	58.1	87.3	183	276
	29	99.6	150	87.8	132	81.5	122	66.5	99.9	56.1	84.3	177	266
	30	96.3	145	84.9	128	78.7	118	64.3	96.6	54.2	81.5	171	257
	32	90.3	136	79.6	120	73.8	111	60.3	90.6	50.8	76.4	160	241
	34	85.0	128	74.9	113	69.5	104	56.7	85.2	47.8	71.9	151	227
	36	80.3	121	70.8	106	65.6	98.6	53.6	80.5	45.2	67.9	143	214
	38	76.0	114	67.0	101	62.2	93.4	50.7	76.3	42.8	64.3	135	203
	40	72.2	109	63.7	95.7	59.1	88.8	48.2	72.4	40.7	61.1	128	193
	42	68.8	103	60.7	91.2	56.2	84.5	45.9	69.0	38.7	58.2	122	184
	44	65.7	98.7	57.9	87.0	53.7	80.7	43.8	65.9	37.0	55.6	117	175
	46	62.8	94.4	55.4	83.2	51.3	77.2	41.9	63.0	35.4	53.2	112	168
	48	60.2	90.5	53.1	79.8	49.2	74.0	40.2	60.4	33.9	50.9	107	161
	50	57.8	86.8	51.0	76.6	47.2	71.0	38.6	58.0	32.5	48.9	103	154
	52	55.6	83.5	49.0	73.6	45.4	68.3	37.1	55.7	31.3	47.0	98.8	148
	54	53.5	80.4	47.2	70.9	43.7	65.7	35.7	53.7	30.1	45.3	95.1	143
	56	51.6	77.5	45.5	68.4	42.2	63.4	34.4	51.7	29.1	43.7	91.7	138
	58	49.8	74.9	43.9	66.0	40.7	61.2	33.2	50.0	28.0	42.2	88.5	133
	60	48.2	72.4	42.5	63.8	39.4	59.2	32.1	48.3	27.1	40.8	85.6	129
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2890	4340	2550	3830	2360	3550	1930	2900	1630	2450	5140	7720
M_y/Ω_b	$\phi_b M_y$, kip-ft	316	475	281	422	257	387	211	317	181	272	569	855
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	361	543	318	479	295	444	241	362	203	306	642	965
BF_1/Ω_b	$\phi_b BF_1$, kips	27.7	41.6	24.5	36.8	29.7	44.7	27.2	40.9	27.1	40.7	21.2	31.9
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	69.9	105	63.5	95.5	62.6	94.2	53.4	80.3	47.0	70.7	92.7	139
V_n/Ω_v	$\phi_v V_{nx}$, kips	174	262	135	203	136	204	112	168	111	167	267	401
Z_x, in.^{3}		111		98.2		91.0		74.7		64.8		198	
L_p, ft		3.87		3.86		3.10		3.02		2.93		5.67	
L_y, ft		5.49		5.40		4.37		4.18		4.02		9.11	
L_r, ft		23.4		22.2		18.4		16.9		15.9		47.4	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W16

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		W16×											
		89		77		67[f2]		57		50		45	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7							388	583				
	8					333	501	352	529	291	437	259	389
	9			389	584	329	495	313	470	261	392	233	351
	10	465	700	381	573	296	445	282	423	235	353	210	316
	11	452	680	347	521	269	405	256	385	213	321	191	287
	12	415	623	318	478	247	371	235	353	196	294	175	263
	13	383	575	293	441	228	343	217	326	181	271	161	243
	14	355	534	272	409	212	318	201	302	168	252	150	225
	15	332	498	254	382	198	297	188	282	157	235	140	210
	16	311	467	238	358	185	278	176	265	147	221	131	197
	17	293	440	224	337	174	262	166	249	138	208	123	186
	18	276	415	212	318	165	247	156	235	130	196	117	175
	19	262	393	201	302	156	234	148	223	124	186	110	166
	20	249	374	191	287	148	223	141	212	117	176	105	158
	21	237	356	182	273	141	212	134	202	112	168	100	150
	22	226	340	173	261	135	202	128	192	107	160	95.4	143
	23	216	325	166	249	129	194	122	184	102	153	91.3	137
	24	207	312	159	239	123	186	117	176	97.8	147	87.5	131
	25	199	299	153	229	119	178	113	169	93.9	141	84.0	126
	26	191	288	147	220	114	171	108	163	90.3	136	80.7	121
	27	184	277	141	212	110	165	104	157	87.0	131	77.7	117
	28	178	267	136	205	106	159	101	151	83.9	126	75.0	113
	29	172	258	132	198	102	154	97.1	146	81.0	122	72.4	109
	30	166	249	127	191	98.8	148	93.9	141	78.3	118	70.0	105
	32	155	234	119	179	92.6	139	88.0	132	73.4	110	65.6	98.6
	34	146	220	112	169	87.2	131	82.8	125	69.1	104	61.7	92.8
	36	138	208	106	159	82.3	124	78.2	118	65.2	98.0	58.3	87.6
	38	131	197	100	151	78.0	117	74.1	111	61.8	92.9	55.2	83.0
	40	124	187	95.3	143	74.1	111	70.4	106	58.7	88.2	52.5	78.9
	42	118	178	90.8	136	70.6	106	67.1	101	55.9	84.0	50.0	75.1
	44	113	170	86.7	130	67.3	101	64.0	96.2	53.4	80.2	47.7	71.7
	46	108	163	82.9	125	64.4	96.8	61.2	92.0	51.0	76.7	45.6	68.6
	48	104	156	79.5	119	61.7	92.8	58.7	88.2	48.9	73.5	43.7	65.7
	50	99.5	150	76.3	115	59.3	89.1	56.3	84.7	47.0	70.6	42.0	63.1
	52	95.7	144	73.3	110	57.0	85.6	54.2	81.4	45.2	67.9	40.4	60.7
	54	92.1	138	70.6	106	54.9	82.5	52.2	78.4	43.5	65.4	38.9	58.4
	56	88.8	134	68.1	102	52.9	79.5	50.3	75.6	41.9	63.0	37.5	56.3
	58	85.8	129	65.8	98.8	51.1	76.8	48.6	73.0	40.5	60.9	36.2	54.4
	60	82.9	125	63.6	95.5	49.4	74.2	46.9	70.6	39.1	58.8	35.0	52.6
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	4970	7480	3810	5730	2960	4450	2820	4230	2350	3530	2100	3160
M_y/Ω_b	$\phi_b M_y$, kip-ft	554	833	427	641	358	538	308	463	259	389	231	348
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	622	935	477	717	370	557	352	529	294	441	262	394
BF_1/Ω_b	$\phi_b BF_1$, kips	19.5	29.3	18.5	27.8	17.2	25.9	24.1	36.2	21.7	32.6	20.3	30.6
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	90.1	135	76.5	115	67.6	102	64.5	97.0	57.2	85.9	52.4	78.8
V_n/Ω_v	$\phi_v V_{nx}$, kips	233	350	194	292	167	250	194	291	145	218	129	194
Z_x, in.^{3}		192		147		123		109		90.5		80.9	
L_p, ft		5.70		5.54		5.43		3.74		3.69		3.65	
L_y, ft		9.17		8.24		7.82		5.57		5.30		5.17	
L_r, ft		47.7		38.3		34.3		26.0		23.1		22.0	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

W16–W14

Shape		W16×								W14×			
		40[f2]		36[f2]		31		26[f2]		132[f2]		120[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6							147	221				
	7			214	321	179	269	144	216				
	8	215	323	203	305	176	264	126	189				
	9	207	311	180	271	156	235	112	168				
	10	186	280	162	244	141	211	101	151				
	11	169	254	147	222	128	192	91.6	138	514	772	508	763
	12	155	233	135	203	117	176	84.0	126	478	719	470	707
	13	143	215	125	187	108	163	77.5	117	441	663	434	653
	14	133	200	116	174	100	151	72.0	108	410	616	403	606
	15	124	186	108	162	93.8	141	67.2	101	382	575	376	566
	16	116	175	101	152	87.9	132	63.0	94.7	359	539	353	530
	17	109	165	95.4	143	82.7	124	59.3	89.1	337	507	332	499
	18	103	155	90.1	135	78.1	117	56.0	84.2	319	479	314	471
	19	97.9	147	85.3	128	74.0	111	53.0	79.7	302	454	297	447
	20	93.0	140	81.1	122	70.3	106	50.4	75.7	287	431	282	424
	21	88.6	133	77.2	116	67.0	101	48.0	72.1	273	411	269	404
	22	84.6	127	73.7	111	63.9	96.1	45.8	68.9	261	392	257	386
	23	80.9	122	70.5	106	61.1	91.9	43.8	65.9	249	375	245	369
	24	77.5	117	67.6	102	58.6	88.1	42.0	63.1	239	359	235	353
	25	74.4	112	64.9	97.5	56.3	84.5	40.3	60.6	229	345	226	339
	26	71.6	108	62.4	93.7	54.1	81.3	38.8	58.3	221	332	217	326
	27	68.9	104	60.0	90.3	52.1	78.3	37.3	56.1	212	319	209	314
	28	66.5	99.9	57.9	87.0	50.2	75.5	36.0	54.1	205	308	202	303
	29	64.2	96.4	55.9	84.0	48.5	72.9	34.8	52.2	198	297	195	293
	30	62.0	93.2	54.0	81.2	46.9	70.5	33.6	50.5	191	287	188	283
	32	58.1	87.4	50.7	76.2	43.9	66.1	31.5	47.3	179	269	176	265
	34	54.7	82.3	47.7	71.7	41.4	62.2	29.6	44.6	169	254	166	250
	36	51.7	77.7	45.0	67.7	39.1	58.7	28.0	42.1	159	240	157	236
	38	49.0	73.6	42.7	64.1	37.0	55.6	26.5	39.9	151	227	149	223
	40	46.5	69.9	40.5	60.9	35.2	52.8	25.2	37.9	143	216	141	212
	42	44.3	66.6	38.6	58.0	33.5	50.3	24.0	36.1	137	205	134	202
	44	42.3	63.6	36.8	55.4	32.0	48.0	22.9	34.4	130	196	128	193
	46	40.5	60.8	35.2	53.0	30.6	45.9	21.9	32.9	125	187	123	184
	48	38.8	58.3	33.8	50.8	29.3	44.0	21.0	31.6	120	180	118	177
	50	37.2	55.9	32.4	48.7	28.1	42.3	20.2	30.3	115	172	113	170
	52	35.8	53.8	31.2	46.9	27.0	40.6	19.4	29.1	110	166	109	163
	54	34.5	51.8	30.0	45.1	26.0	39.1	18.7	28.1	106	160	105	157
	56	33.2	49.9	29.0	43.5	25.1	37.7	18.0	27.0	102	154	101	151
	58	32.1	48.2	28.0	42.0	24.2	36.4	17.4	26.1	98.9	149	97.3	146
	60	31.0	46.6	27.0	40.6	23.4	35.2	16.8	25.2	95.6	144	94.1	141
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1860	2800	1620	2440	1410	2110	1010	1510	5740	8620	5640	8480
M_y/Ω_b	$\phi_b M_y$, kip-ft	206	310	189	284	153	230	123	185	659	990	646	971
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	233	350	203	305	176	264	126	189	717	1080	706	1060
BF_1/Ω_b	$\phi_b BF_1$, kips	18.6	28.0	18.5	27.7	20.9	31.4	18.8	28.3	12.7	19.1	12.6	18.9
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	47.8	71.9	44.6	67.0	40.1	60.2	33.2	49.9	86.8	130	84.5	127
V_n/Ω_v	$\phi_v V_{nx}$, kips	108	162	107	161	89.7	135	73.6	111	257	386	254	382
Z_x, in.^{3}		71.9		66.2		54.2		43.6		227		223	
L_p, ft		3.62		3.57		2.79		2.72		8.18		8.20	
L_y, ft		5.06		4.96		3.86		3.71		14.2		14.3	
L_r, ft		20.9		20.1		15.6		14.5		79.3		80.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-6 (continued)
Maximum Total Uniform Load, kips
W-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		W14×											
		109[f2]		99[f2]		90[f2]		82		74		68	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	8									358	538		
	9			398	598	353	531	401	602	346	520	314	472
	10			360	542	351	527	398	598	311	468	299	450
	11			328	493	319	479	361	543	283	426	272	409
	12			300	451	292	439	331	498	260	390	250	375
	13	401	602	277	417	270	405	306	460	240	360	230	346
	14	387	582	257	387	250	376	284	427	222	334	214	321
	15	361	543	240	361	234	351	265	398	208	312	200	300
	16	339	509	225	339	219	329	249	374	195	293	187	281
	17	319	479	212	319	206	310	234	352	183	275	176	265
	18	301	453	200	301	195	293	221	332	173	260	166	250
	19	285	429	190	285	184	277	209	315	164	246	158	237
	20	271	407	180	271	175	263	199	299	156	234	150	225
	21	258	388	172	258	167	251	189	285	148	223	143	214
	22	246	370	164	246	159	239	181	272	142	213	136	205
	23	236	354	157	236	152	229	173	260	135	204	130	196
	24	226	340	150	226	146	220	166	249	130	195	125	188
	25	217	326	144	217	140	211	159	239	125	187	120	180
	26	209	313	139	208	135	203	153	230	120	180	115	173
	27	201	302	134	201	130	195	147	221	115	173	111	167
	28	194	291	129	193	125	188	142	213	111	167	107	161
	29	187	281	124	187	121	182	137	206	107	161	103	155
	30	181	272	120	181	117	176	133	199	104	156	99.8	150
	32	169	255	113	169	110	165	124	187	97.3	146	93.6	141
	34	159	240	106	159	103	155	117	176	91.6	138	88.1	132
	36	151	226	100	150	97.4	146	110	166	86.5	130	83.2	125
	38	143	214	94.9	143	92.2	139	105	157	82.0	123	78.8	118
	40	136	204	90.1	135	87.6	132	99.4	149	77.9	117	74.9	113
	42	129	194	85.8	129	83.5	125	94.7	142	74.2	111	71.3	107
	44	123	185	81.9	123	79.7	120	90.4	136	70.8	106	68.0	102
	46	118	177	78.4	118	76.2	115	86.4	130	67.7	102	65.1	97.8
	48	113	170	75.1	113	73.0	110	82.8	125	64.9	97.5	62.4	93.8
	50	108	163	72.1	108	70.1	105	79.5	120	62.3	93.6	59.9	90.0
	52	104	157	69.3	104	67.4	101	76.5	115	59.9	90.0	57.6	86.5
	54	100	151	66.8	100	64.9	97.6	73.6	111	57.7	86.7	55.4	83.3
	56	96.8	146	64.4	96.7	62.6	94.1	71.0	107	55.6	83.6	53.5	80.4
	58	93.5	140	62.2	93.4	60.4	90.8	68.6	103	53.7	80.7	51.6	77.6
	60	90.4	136	60.1	90.3	58.4	87.8	66.3	99.6	51.9	78.0	49.9	75.0
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	5420	8150	3600	5420	3510	5270	3980	5980	3110	4680	2990	4500
M_y/Ω_b	$\phi_b M_y$, kip-ft	622	935	492	739	477	717	441	663	348	524	336	505
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	678	1020	451	677	438	659	497	747	389	585	374	563
BF_1/Ω_b	$\phi_b BF_1$, kips	11.3	17.0	11.4	17.1	10.6	15.9	13.5	20.3	13.5	20.2	12.5	18.8
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	81.5	122	71.9	108	69.7	105	67.5	101	59.6	89.6	57.6	86.5
V_n/Ω_v	$\phi_v V_{nx}$, kips	200	301	199	299	177	265	200	301	179	269	157	236
Z_x, in.^{3}		213		167		162		153		120		115	
L_p, ft		8.21		8.04		8.03		5.61		5.50		5.47	
L_y, ft		14.3		12.5		12.5		9.75		8.54		8.51	
L_r, ft		80.3		62.7		62.6		54.5		42.4		42.3	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W14

Shape		W14×											
		61[f2]		53		48		43[f2]		38		34[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7			271	408			202	304	205	308	171	257
	8	271	408	266	399	244	366	199	299	193	290	167	250
	9	266	399	236	355	230	346	177	266	171	258	148	222
	10	239	359	212	319	207	312	159	239	154	232	133	200
	11	217	327	193	290	188	283	145	217	140	211	121	182
	12	199	299	177	266	173	260	133	199	129	193	111	167
	13	184	276	163	246	159	240	122	184	119	178	102	154
	14	171	257	152	228	148	223	114	171	110	166	95.2	143
	15	159	240	142	213	138	208	106	159	103	155	88.8	133
	16	149	225	133	200	130	195	99.5	149	96.4	145	83.3	125
	17	141	211	125	188	122	183	93.6	141	90.8	136	78.4	118
	18	133	200	118	177	115	173	88.4	133	85.7	129	74.0	111
	19	126	189	112	168	109	164	83.7	126	81.2	122	70.1	105
	20	120	180	106	160	104	156	79.6	120	77.1	116	66.6	100
	21	114	171	101	152	98.7	148	75.8	114	73.5	110	63.4	95.4
	22	109	163	96.6	145	94.2	142	72.3	109	70.1	105	60.6	91.0
	23	104	156	92.4	139	90.1	135	69.2	104	67.1	101	57.9	87.1
	24	99.6	150	88.5	133	86.4	130	66.3	99.7	64.3	96.6	55.5	83.4
	25	95.6	144	85.0	128	82.9	125	63.6	95.7	61.7	92.8	53.3	80.1
	26	92.0	138	81.7	123	79.7	120	61.2	92.0	59.3	89.2	51.2	77.0
	27	88.5	133	78.7	118	76.8	115	58.9	88.6	57.1	85.9	49.3	74.2
	28	85.4	128	75.9	114	74.0	111	56.8	85.4	55.1	82.8	47.6	71.5
	29	82.4	124	73.3	110	71.5	107	54.9	82.5	53.2	80.0	45.9	69.0
	30	79.7	120	70.8	106	69.1	104	53.0	79.7	51.4	77.3	44.4	66.7
	32	74.7	112	66.4	99.8	64.8	97.4	49.7	74.7	48.2	72.5	41.6	62.6
	34	70.3	106	62.5	93.9	61.0	91.7	46.8	70.3	45.4	68.2	39.2	58.9
	36	66.4	99.8	59.0	88.7	57.6	86.6	44.2	66.4	42.9	64.4	37.0	55.6
	38	62.9	94.6	55.9	84.0	54.6	82.0	41.9	62.9	40.6	61.0	35.1	52.7
	40	59.8	89.8	53.1	79.8	51.8	77.9	39.8	59.8	38.6	58.0	33.3	50.1
	42	56.9	85.6	50.6	76.0	49.4	74.2	37.9	56.9	36.7	55.2	31.7	47.7
	44	54.3	81.7	48.3	72.6	47.1	70.8	36.2	54.4	35.1	52.7	30.3	45.5
	46	52.0	78.1	46.2	69.4	45.1	67.7	34.6	52.0	33.5	50.4	29.0	43.5
	48	49.8	74.9	44.3	66.5	43.2	64.9	33.2	49.8	32.1	48.3	27.8	41.7
	50	47.8	71.9	42.5	63.9	41.5	62.3	31.8	47.8	30.9	46.4	26.6	40.0
	52	46.0	69.1	40.9	61.4	39.9	59.9	30.6	46.0	29.7	44.6	25.6	38.5
	54	44.3	66.5	39.3	59.1	38.4	57.7	29.5	44.3	28.6	42.9	24.7	37.1
	56	42.7	64.2	37.9	57.0	37.0	55.6	28.4	42.7	27.6	41.4	23.8	35.8
	58	41.2	62.0	36.6	55.1	35.7	53.7	27.4	41.2	26.6	40.0	23.0	34.5
	60	39.8	59.9	35.4	53.2	34.6	51.9	26.5	39.9	25.7	38.7	22.2	33.4
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2390	3590	2120	3190	2070	3120	1590	2390	1540	2320	1330	2000
M_y/Ω_b	$\phi_b M_y$, kip-ft	287	431	237	356	232	349	190	286	171	257	154	231
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	299	449	266	399	259	390	199	299	193	290	167	250
BF_1/Ω_b	$\phi_b BF_1$, kips	11.8	17.8	13.8	20.7	13.0	19.6	12.0	18.1	14.6	22.0	13.3	20.0
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	52.1	78.2	47.1	70.8	46.2	69.4	40.2	60.4	39.1	58.7	35.8	53.9
V_n/Ω_v	$\phi_v V_{nx}$, kips	136	204	136	204	122	183	101	152	102	154	85.6	129
Z_x, in.^{3}		98.0		81.9		79.9		65.4		59.5		53.2	
L_p, ft		5.42		4.31		4.32		4.24		3.54		3.52	
L_y, ft		8.04		6.40		6.40		6.06		5.03		4.94	
L_r, ft		37.2		29.6		29.6		26.1		21.5		20.5	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W14–W12

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		W14×						W12×					
		30[f2]		26		22[f2]		106		96		87[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6	169	254			114	172						
	7	146	220	142	213	112	169						
	8	128	192	125	188	98.2	148					350	527
	9	114	171	111	167	87.3	131	452	679			328	492
	10	102	154	99.9	150	78.6	118	425	639	399	599	295	443
	11	93.0	140	90.8	137	71.4	107	386	581	375	563	268	403
	12	85.2	128	83.3	125	65.5	98.4	354	532	343	516	246	369
	13	78.7	118	76.9	116	60.4	90.8	327	491	317	476	227	341
	14	73.1	110	71.4	107	56.1	84.3	303	456	294	442	211	317
	15	68.2	102	66.6	100	52.4	78.7	283	426	275	413	197	295
	16	63.9	96.1	62.5	93.9	49.1	73.8	266	399	257	387	184	277
	17	60.2	90.4	58.8	88.4	46.2	69.5	250	376	242	364	173	261
	18	56.8	85.4	55.5	83.4	43.6	65.6	236	355	229	344	164	246
	19	53.8	80.9	52.6	79.1	41.3	62.1	224	336	217	326	155	233
	20	51.1	76.9	50.0	75.1	39.3	59.0	212	319	206	310	147	222
	21	48.7	73.2	47.6	71.5	37.4	56.2	202	304	196	295	140	211
	22	46.5	69.9	45.4	68.3	35.7	53.7	193	290	187	281	134	201
	23	44.5	66.8	43.4	65.3	34.2	51.3	185	278	179	269	128	193
	24	42.6	64.1	41.6	62.6	32.7	49.2	177	266	172	258	123	185
	25	40.9	61.5	40.0	60.1	31.4	47.2	170	255	165	248	118	177
	26	39.3	59.1	38.4	57.8	30.2	45.4	163	246	158	238	113	170
	27	37.9	56.9	37.0	55.6	29.1	43.7	157	237	153	229	109	164
	28	36.5	54.9	35.7	53.6	28.1	42.2	152	228	147	221	105	158
	29	35.3	53.0	34.5	51.8	27.1	40.7	147	220	142	214	102	153
	30	34.1	51.2	33.3	50.1	26.2	39.4	142	213	137	206	98.3	148
	32	32.0	48.0	31.2	46.9	24.6	36.9	133	200	129	193	92.1	138
	34	30.1	45.2	29.4	44.2	23.1	34.7	125	188	121	182	86.7	130
	36	28.4	42.7	27.8	41.7	21.8	32.8	118	177	114	172	81.9	123
	38	26.9	40.5	26.3	39.5	20.7	31.1	112	168	108	163	77.6	117
	40	25.6	38.4	25.0	37.6	19.6	29.5	106	160	103	155	73.7	111
	42	24.4	36.6	23.8	35.8	18.7	28.1	101	152	98.1	147	70.2	106
	44	23.2	34.9	22.7	34.1	17.9	26.8	96.6	145	93.6	141	67.0	101
	46	22.2	33.4	21.7	32.7	17.1	25.7	92.4	139	89.6	135	64.1	96.3
	48	21.3	32.0	20.8	31.3	16.4	24.6	88.5	133	85.8	129	61.4	92.3
	50	20.5	30.7	20.0	30.0	15.7	23.6	85.0	128	82.4	124	59.0	88.6
	52	19.7	29.6	19.2	28.9	15.1	22.7	81.7	123	79.2	119	56.7	85.2
	54	18.9	28.5	18.5	27.8	14.5	21.9	78.7	118	76.3	115	54.6	82.1
	56	18.3	27.5	17.8	26.8	14.0	21.1	75.9	114	73.6	111	52.7	79.1
	58	17.6	26.5	17.2	25.9	13.5	20.4	73.3	110	71.0	107	50.8	76.4
	60	17.0	25.6	16.7	25.0	13.1	19.7	70.8	106	68.7	103	49.1	73.9
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1020	1540	999	1500	786	1180	4250	6390	4120	6190	2950	4430
M_y/Ω_b	$\phi_b M_y$, kip-ft	131	197	109	164	92.9	140	469	705	457	687	354	533
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	128	192	125	188	98.2	148	531	798	515	774	369	554
BF_1/Ω_b	$\phi_b BF_1$, kips	13.0	19.5	15.6	23.5	13.8	20.7	10.3	15.5	9.60	14.4	9.51	14.3
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	31.5	47.4	29.4	44.2	25.6	38.5	62.8	94.3	60.8	91.4	53.1	79.8
V_n/Ω_v	$\phi_v V_{nx}$, kips	84.5	127	71.0	107	57.1	85.8	226	340	199	300	175	263
Z_x, in.^{3}		45.8		38.5		32.7		164		159		122	
L_p, ft		3.44		2.56		2.53		6.83		6.87		6.68	
L_y, ft		4.77		3.55		3.47		12.8		12.9		10.9	
L_r, ft		19.3		14.5		13.8		75.5		76.3		58.1	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W12

Shape		W12×											
		76[f2]		72[f2]		65[f2]		58[f2]		53[f2]		50	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	7			310	466					228	343	255	383
	8			275	413	254	382	231	346	215	323	226	340
	9	313	470	244	367	235	354	225	338	191	287	201	302
	10	289	435	220	330	212	318	203	304	172	258	181	272
	11	263	395	200	300	192	289	184	277	156	235	164	247
	12	241	362	183	275	176	265	169	254	143	215	151	227
	13	222	334	169	254	163	245	156	234	132	199	139	209
	14	207	310	157	236	151	227	145	217	123	184	129	194
	15	193	290	146	220	141	212	135	203	114	172	121	181
	16	181	272	137	206	132	199	127	190	107	161	113	170
	17	170	256	129	194	125	187	119	179	101	152	106	160
	18	161	241	122	183	118	177	113	169	95.4	143	100	151
	19	152	229	116	174	111	167	107	160	90.4	136	95.2	143
	20	145	217	110	165	106	159	101	152	85.9	129	90.4	136
	21	138	207	105	157	101	152	96.4	145	81.8	123	86.1	129
	22	131	198	99.9	150	96.2	145	92.1	138	78.1	117	82.2	124
	23	126	189	95.5	144	92.0	138	88.1	132	74.7	112	78.6	118
	24	120	181	91.5	138	88.2	133	84.4	127	71.6	108	75.4	113
	25	116	174	87.9	132	84.7	127	81.0	122	68.7	103	72.3	109
	26	111	167	84.5	127	81.4	122	77.9	117	66.1	99.3	69.6	105
	27	107	161	81.4	122	78.4	118	75.0	113	63.6	95.6	67.0	101
	28	103	155	78.5	118	75.6	114	72.3	109	61.3	92.2	64.6	97.1
	29	99.7	150	75.8	114	73.0	110	69.8	105	59.2	89.0	62.4	93.7
	30	96.4	145	73.2	110	70.6	106	67.5	101	57.2	86.0	60.3	90.6
	32	90.4	136	68.7	103	66.2	99.4	63.3	95.1	53.7	80.7	56.5	84.9
	34	85.0	128	64.6	97.1	62.3	93.6	59.6	89.5	50.5	75.9	53.2	79.9
	36	80.3	121	61.0	91.7	58.8	88.4	56.3	84.6	47.7	71.7	50.2	75.5
	38	76.1	114	57.8	86.9	55.7	83.7	53.3	80.1	45.2	67.9	47.6	71.5
	40	72.3	109	54.9	82.6	52.9	79.5	50.6	76.1	42.9	64.5	45.2	68.0
	42	68.8	103	52.3	78.6	50.4	75.8	48.2	72.5	40.9	61.5	43.1	64.7
	44	65.7	98.8	49.9	75.0	48.1	72.3	46.0	69.2	39.0	58.7	41.1	61.8
	46	62.9	94.5	47.8	71.8	46.0	69.2	44.0	66.2	37.3	56.1	39.3	59.1
	48	60.2	90.5	45.8	68.8	44.1	66.3	42.2	63.4	35.8	53.8	37.7	56.6
	50	57.8	86.9	43.9	66.0	42.3	63.6	40.5	60.9	34.3	51.6	36.2	54.4
	52	55.6	83.6	42.3	63.5	40.7	61.2	38.9	58.5	33.0	49.6	34.8	52.3
	54	53.5	80.5	40.7	61.2	39.2	58.9	37.5	56.4	31.8	47.8	33.5	50.3
	56	51.6	77.6	39.2	59.0	37.8	56.8	36.2	54.4	30.7	46.1	32.3	48.5
	58	49.9	74.9	37.9	56.9	36.5	54.9	34.9	52.5	29.6	44.5	31.2	46.9
	60	48.2	72.4	36.6	55.0	35.3	53.0	33.8	50.7	28.6	43.0	30.1	45.3
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2890	4350	2200	3300	2120	3180	2030	3040	1720	2580	1810	2720
M_y/Ω_b	$\phi_b M_y$, kip-ft	348	523	297	446	286	430	243	366	221	332	202	303
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	361	543	275	413	265	398	253	380	215	323	226	340
BF_1/Ω_b	$\phi_b BF_1$, kips	8.97	13.5	8.94	13.4	7.96	12.0	8.69	13.1	8.53	12.8	10.3	15.4
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	52.2	78.4	47.5	71.3	45.8	68.9	42.2	63.4	39.6	59.5	38.2	57.5
V_n/Ω_v	$\phi_v V_{nx}$, kips	156	235	155	233	127	191	115	173	114	172	128	192
Z_x, in.^{3}		119		101		97.1		82.8		75.2		69.7	
L_p, ft		6.71		6.57		6.62		5.49		5.45		4.38	
L_y, ft		11.0		10.2		10.2		8.42		8.15		6.73	
L_r, ft		58.1		50.1		50.2		41.1		38.3		33.0	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W12

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

Shape		W12×											
		45[f2]		40[f2]		35		30[f2]		26[f2]		22	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	5											136	204
	6					195	292					121	181
	7	228	343			184	277			110	165	103	155
	8	200	301	161	242	161	242	136	205	105	158	90.4	136
	9	178	268	147	220	143	215	122	183	93.5	141	80.4	121
	10	160	241	132	198	129	194	109	165	84.1	126	72.4	109
	11	146	219	120	180	117	176	99.5	150	76.5	115	65.8	98.9
	12	133	201	110	165	107	162	91.2	137	70.1	105	60.3	90.6
	13	123	185	101	152	99.2	149	84.2	127	64.7	97.3	55.7	83.6
	14	114	172	94.2	142	92.1	138	78.2	118	60.1	90.3	51.7	77.7
	15	107	161	87.9	132	86.0	129	73.0	110	56.1	84.3	48.2	72.5
	16	100	150	82.4	124	80.6	121	68.4	103	52.6	79.0	45.2	68.0
	17	94.2	142	77.6	117	75.9	114	64.4	96.8	49.5	74.4	42.6	64.0
	18	89.0	134	73.3	110	71.7	108	60.8	91.4	46.7	70.3	40.2	60.4
	19	84.3	127	69.4	104	67.9	102	57.6	86.6	44.3	66.6	38.1	57.2
	20	80.1	120	65.9	99.1	64.5	96.9	54.7	82.3	42.1	63.2	36.2	54.4
	21	76.3	115	62.8	94.4	61.4	92.3	52.1	78.3	40.1	60.2	34.5	51.8
	22	72.8	109	59.9	90.1	58.6	88.1	49.8	74.8	38.2	57.5	32.9	49.4
	23	69.6	105	57.3	86.2	56.1	84.3	47.6	71.5	36.6	55.0	31.5	47.3
	24	66.7	100	54.9	82.6	53.7	80.8	45.6	68.5	35.1	52.7	30.1	45.3
	25	64.1	96.3	52.7	79.3	51.6	77.5	43.8	65.8	33.7	50.6	28.9	43.5
	26	61.6	92.6	50.7	76.2	49.6	74.6	42.1	63.3	32.4	48.6	27.8	41.8
	27	59.3	89.2	48.8	73.4	47.8	71.8	40.5	60.9	31.2	46.8	26.8	40.3
	28	57.2	86.0	47.1	70.8	46.1	69.2	39.1	58.8	30.1	45.2	25.8	38.8
	29	55.2	83.0	45.5	68.3	44.5	66.8	37.7	56.7	29.0	43.6	24.9	37.5
	30	53.4	80.3	44.0	66.1	43.0	64.6	36.5	54.8	28.0	42.2	24.1	36.2
	32	50.1	75.2	41.2	61.9	40.3	60.6	34.2	51.4	26.3	39.5	22.6	34.0
	34	47.1	70.8	38.8	58.3	37.9	57.0	32.2	48.4	24.7	37.2	21.3	32.0
	36	44.5	66.9	36.6	55.1	35.8	53.9	30.4	45.7	23.4	35.1	20.1	30.2
	38	42.2	63.4	34.7	52.2	33.9	51.0	28.8	43.3	22.1	33.3	19.0	28.6
	40	40.0	60.2	33.0	49.5	32.2	48.5	27.4	41.1	21.0	31.6	18.1	27.2
	42	38.1	57.3	31.4	47.2	30.7	46.2	26.1	39.2	20.0	30.1	17.2	25.9
	44	36.4	54.7	30.0	45.0	29.3	44.1	24.9	37.4	19.1	28.7	16.4	24.7
	46	34.8	52.3	28.7	43.1	28.0	42.1	23.8	35.8	18.3	27.5	15.7	23.6
	48	33.4	50.2	27.5	41.3	26.9	40.4	22.8	34.3	17.5	26.3	15.1	22.7
	50	32.0	48.2	26.4	39.6	25.8	38.8	21.9	32.9	16.8	25.3	14.5	21.7
	52	30.8	46.3	25.4	38.1	24.8	37.3	21.0	31.6	16.2	24.3	13.9	20.9
	54	29.7	44.6	24.4	36.7	23.9	35.9	20.3	30.5	15.6	23.4	13.4	20.1
	56	28.6	43.0	23.5	35.4	23.0	34.6	19.5	29.4	15.0	22.6	12.9	19.4
	58	27.6	41.5	22.7	34.2	22.2	33.4	18.9	28.4	14.5	21.8	12.5	18.7
	60	26.7	40.1	22.0	33.0	21.5	32.3	18.2	27.4	14.0	21.1	12.1	18.1
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1600	2410	1320	1980	1290	1940	1090	1650	841	1260	724	1090
M_y/Ω_b	$\phi_b M_y$, kip-ft	182	273	158	238	143	215	125	188	105	158	78.2	118
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	200	301	165	248	161	242	137	206	105	158	90.4	136
BF_1/Ω_b	$\phi_b BF_1$, kips	9.84	14.8	8.36	12.6	11.5	17.4	9.64	14.5	8.60	12.9	14.6	22.0
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	35.7	53.6	32.2	48.3	32.1	48.2	28.7	43.2	25.1	37.7	22.6	33.9
V_n/Ω_v	$\phi_v V_{nx}$, kips	114	172	80.5	121	97.3	146	68.1	102	55.0	82.7	67.8	102
Z_x, in.^{3}		62.6		54.0		49.7		42.9		36.0		27.9	
L_p, ft		4.34		4.33		3.46		3.46		3.42		2.04	
L_y, ft		6.49		6.32		5.02		4.93		4.77		2.87	
L_r, ft		30.5		28.4		22.3		21.1		19.5		12.0	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

W12–W10

Shape		W12×						W10×					
		19		16[f2]		14[f2]		88		77		68	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4			108	162	92.9	140						
	5	110	165	89.7	135	74.3	112						
	6	103	155	74.7	112	61.9	93.0						
	7	88.6	133	64.1	96.3	53.1	79.7	378	569				
	8	77.5	117	56.0	84.2	46.4	69.8	367	551			262	394
	9	68.9	104	49.8	74.9	41.3	62.0	326	490	297	446	236	355
	10	62.0	93.2	44.8	67.4	37.1	55.8	293	441	278	418	213	320
	11	56.4	84.8	40.8	61.3	33.8	50.7	267	401	253	380	193	291
	12	51.7	77.7	37.4	56.2	31.0	46.5	244	367	232	348	177	267
	13	47.7	71.7	34.5	51.8	28.6	42.9	226	339	214	321	164	246
	14	44.3	66.6	32.0	48.1	26.5	39.9	210	315	199	299	152	228
	15	41.4	62.2	29.9	44.9	24.8	37.2	196	294	185	279	142	213
	16	38.8	58.3	28.0	42.1	23.2	34.9	183	276	174	261	133	200
	17	36.5	54.8	26.4	39.6	21.8	32.8	173	259	164	246	125	188
	18	34.5	51.8	24.9	37.4	20.6	31.0	163	245	154	232	118	178
	19	32.6	49.1	23.6	35.5	19.5	29.4	154	232	146	220	112	168
	20	31.0	46.6	22.4	33.7	18.6	27.9	147	220	139	209	106	160
	21	29.5	44.4	21.4	32.1	17.7	26.6	140	210	132	199	101	152
	22	28.2	42.4	20.4	30.6	16.9	25.4	133	200	126	190	96.7	145
	23	27.0	40.5	19.5	29.3	16.1	24.3	128	192	121	182	92.5	139
	24	25.8	38.8	18.7	28.1	15.5	23.3	122	184	116	174	88.7	133
	25	24.8	37.3	17.9	27.0	14.9	22.3	117	176	111	167	85.1	128
	26	23.9	35.9	17.2	25.9	14.3	21.5	113	170	107	161	81.8	123
	27	23.0	34.5	16.6	25.0	13.8	20.7	109	163	103	155	78.8	118
	28	22.2	33.3	16.0	24.1	13.3	19.9	105	157	99.3	149	76.0	114
	29	21.4	32.1	15.5	23.2	12.8	19.2	101	152	95.9	144	73.4	110
	30	20.7	31.1	14.9	22.5	12.4	18.6	97.8	147	92.7	139	70.9	107
	32	19.4	29.1	14.0	21.1	11.6	17.4	91.7	138	86.9	131	66.5	99.9
	34	18.2	27.4	13.2	19.8	10.9	16.4	86.3	130	81.8	123	62.6	94.1
	36	17.2	25.9	12.5	18.7	10.3	15.5	81.5	122	77.2	116	59.1	88.8
	38	16.3	24.5	11.8	17.7	9.77	14.7	77.2	116	73.2	110	56.0	84.2
	40	15.5	23.3	11.2	16.8	9.29	14.0	73.3	110	69.5	104	53.2	80.0
	42	14.8	22.2	10.7	16.0	8.84	13.3	69.8	105	66.2	99.5	50.7	76.2
	44	14.1	21.2	10.2	15.3	8.44	12.7	66.7	100	63.2	95.0	48.4	72.7
	46	13.5	20.3	9.75	14.7	8.07	12.1	63.8	95.8	60.5	90.9	46.3	69.5
	48	12.9	19.4	9.34	14.0	7.74	11.6	61.1	91.8	57.9	87.1	44.3	66.6
	50	12.4	18.6	8.97	13.5	7.43	11.2	58.7	88.2	55.6	83.6	42.6	64.0
	52	11.9	17.9	8.62	13.0	7.14	10.7	56.4	84.8	53.5	80.4	40.9	61.5
	54	11.5	17.3	8.30	12.5	6.88	10.3	54.3	81.6	51.5	77.4	39.4	59.2
	56	11.1	16.6	8.01	12.0	6.63	9.97	52.4	78.7	49.7	74.6	38.0	57.1
	58	10.7	16.1	7.73	11.6	6.40	9.62	50.6	76.0	47.9	72.1	36.7	55.1
	60	10.3	15.5	7.47	11.2	6.19	9.30	48.9	73.5	46.3	69.7	35.5	53.3
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	620	932	448	674	371	558	2930	4410	2780	4180	2130	3200
M_y/Ω_b	$\phi_b M_y$, kip-ft	67.2	101	52.3	78.6	47.5	71.4	319	480	305	458	237	356
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	77.5	117	56.0	84.2	46.4	69.8	367	551	348	522	266	400
BF_1/Ω_b	$\phi_b BF_1$, kips	13.2	19.9	13.3	19.9	13.3	19.9	7.04	10.6	6.39	9.60	6.53	9.81
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	20.0	30.0	16.2	24.4	15.0	22.5	42.0	63.1	40.1	60.3	35.4	53.2
V_n/Ω_v	$\phi_v V_{nx}$, kips	54.9	82.5	54.0	81.1	53.6	80.6	189	284	149	223	131	197
Z_x, in.^{3}		23.9		19.0		17.4		113		107		82.0	
L_p, ft		2.01		1.90		1.86		5.83		5.82		5.65	
L_y, ft		2.79		2.61		2.53		12.5		12.5		10.1	
L_r, ft		11.3		10.3		9.91		78.0		77.7		57.7	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W10

Duplex Stainless Steel

F_y = 65 ksi

Shape		W10×											
		60[f2]		54[f2]		49[f2]		45		39[f2]		33[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6					196	295			174	261	147	220
	7	234	352	212	319	195	293	198	298	153	230	127	191
	8	208	312	203	305	170	256	176	265	134	201	111	167
	9	185	277	180	271	151	228	157	236	119	179	98.8	149
	10	166	250	162	244	136	205	141	212	107	161	89.0	134
	11	151	227	147	222	124	186	128	193	97.3	146	80.9	122
	12	138	208	135	203	114	171	118	177	89.2	134	74.1	111
	13	128	192	125	188	105	158	108	163	82.3	124	68.4	103
	14	119	178	116	174	97.3	146	101	151	76.4	115	63.5	95.5
	15	111	166	108	163	90.8	137	94.0	141	71.3	107	59.3	89.1
	16	104	156	101	152	85.2	128	88.1	132	66.9	100	55.6	83.6
	17	97.7	147	95.4	143	80.2	120	83.0	125	62.9	94.6	52.3	78.6
	18	92.3	139	90.1	135	75.7	114	78.3	118	59.4	89.3	49.4	74.3
	19	87.5	131	85.4	128	71.7	108	74.2	112	56.3	84.6	46.8	70.4
	20	83.1	125	81.1	122	68.1	102	70.5	106	53.5	80.4	44.5	66.8
	21	79.1	119	77.2	116	64.9	97.5	67.2	101	50.9	76.6	42.4	63.7
	22	75.5	114	73.7	111	61.9	93.1	64.1	96.3	48.6	73.1	40.4	60.8
	23	72.2	109	70.5	106	59.2	89.0	61.3	92.2	46.5	69.9	38.7	58.1
	24	69.2	104	67.6	102	56.8	85.3	58.8	88.3	44.6	67.0	37.1	55.7
	25	66.5	99.9	64.9	97.5	54.5	81.9	56.4	84.8	42.8	64.3	35.6	53.5
	26	63.9	96.1	62.4	93.8	52.4	78.8	54.2	81.5	41.1	61.8	34.2	51.4
	27	61.5	92.5	60.1	90.3	50.5	75.9	52.2	78.5	39.6	59.6	32.9	49.5
	28	59.3	89.2	57.9	87.1	48.7	73.1	50.4	75.7	38.2	57.4	31.8	47.7
	29	57.3	86.1	55.9	84.1	47.0	70.6	48.6	73.1	36.9	55.4	30.7	46.1
	30	55.4	83.2	54.1	81.3	45.4	68.3	47.0	70.7	35.7	53.6	29.7	44.6
	32	51.9	78.0	50.7	76.2	42.6	64.0	44.1	66.2	33.4	50.2	27.8	41.8
	34	48.9	73.5	47.7	71.7	40.1	60.2	41.5	62.3	31.5	47.3	26.2	39.3
	36	46.2	69.4	45.1	67.7	37.9	56.9	39.2	58.9	29.7	44.7	24.7	37.1
	38	43.7	65.7	42.7	64.2	35.9	53.9	37.1	55.8	28.2	42.3	23.4	35.2
	40	41.5	62.4	40.6	61.0	34.1	51.2	35.3	53.0	26.7	40.2	22.2	33.4
	42	39.6	59.5	38.6	58.1	32.4	48.8	33.6	50.5	25.5	38.3	21.2	31.8
	44	37.8	56.8	36.9	55.4	31.0	46.5	32.0	48.2	24.3	36.5	20.2	30.4
	46	36.1	54.3	35.3	53.0	29.6	44.5	30.7	46.1	23.3	35.0	19.3	29.1
	48	34.6	52.0	33.8	50.8	28.4	42.7	29.4	44.2	22.3	33.5	18.5	27.9
	50	33.2	49.9	32.4	48.8	27.3	41.0	28.2	42.4	21.4	32.2	17.8	26.7
	52	32.0	48.0	31.2	46.9	26.2	39.4	27.1	40.8	20.6	30.9	17.1	25.7
	54	30.8	46.2	30.0	45.2	25.2	37.9	26.1	39.3	19.8	29.8	16.5	24.8
	56	29.7	44.6	29.0	43.5	24.3	36.6	25.2	37.8	19.1	28.7	15.9	23.9
	58	28.6	43.1	28.0	42.0	23.5	35.3	24.3	36.5	18.4	27.7	15.3	23.1
	60	27.7	41.6	27.0	40.6	22.7	34.1	23.5	35.3	17.8	26.8	14.8	22.3
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1660	2500	1620	2440	1360	2050	1410	2120	1070	1610	890	1340
M_y/Ω_b	$\phi_b M_y$, kip-ft	200	300	194	292	175	263	158	237	128	193	114	171
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	208	312	203	305	170	256	176	265	134	201	111	167
BF_1/Ω_b	$\phi_b BF_1$, kips	6.26	9.40	5.95	8.94	5.71	8.58	6.49	9.76	6.09	9.15	5.53	8.32
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	31.9	48.0	31.1	46.8	29.2	43.9	27.8	41.7	24.4	36.7	22.3	33.6
V_n/Ω_v	$\phi_v V_{nx}$, kips	117	176	106	160	98.1	147	99.1	149	86.9	131	73.3	110
Z_x, in.^{3}		68.7		66.6		59.8		54.3		43.9		38.7	
L_p, ft		5.59		5.56		5.53		4.43		4.36		4.33	
L_y, ft		9.24		9.18		8.78		7.29		6.68		6.49	
L_r, ft		49.4		49.1		44.9		38.8		32.6		30.4	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-6 (continued)

Duplex Stainless Steel

$F_y = 65$ ksi

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W10

Shape		W10×											
		30		26		22[f2]		19		17		15[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4					125	188	126	189	116	174	90.6	136
	5	180	270			121	182	112	169	92.9	140	72.5	109
	6	156	235	127	191	101	152	93.6	141	77.4	116	60.4	90.8
	7	134	201	115	173	86.7	130	80.2	121	66.3	99.7	51.8	77.8
	8	117	176	101	152	75.9	114	70.2	105	58.0	87.2	45.3	68.1
	9	104	156	89.7	135	67.5	101	62.4	93.8	51.6	77.5	40.3	60.5
	10	93.7	141	80.7	121	60.7	91.2	56.1	84.4	46.4	69.8	36.2	54.5
	11	85.2	128	73.4	110	55.2	82.9	51.0	76.7	42.2	63.4	32.9	49.5
	12	78.1	117	67.2	101	50.6	76.0	46.8	70.3	38.7	58.2	30.2	45.4
	13	72.1	108	62.1	93.3	46.7	70.2	43.2	64.9	35.7	53.7	27.9	41.9
	14	66.9	101	57.6	86.6	43.4	65.2	40.1	60.3	33.2	49.8	25.9	38.9
	15	62.5	93.9	53.8	80.9	40.5	60.8	37.4	56.3	31.0	46.5	24.2	36.3
	16	58.6	88.0	50.4	75.8	37.9	57.0	35.1	52.7	29.0	43.6	22.6	34.0
	17	55.1	82.8	47.5	71.3	35.7	53.7	33.0	49.6	27.3	41.1	21.3	32.0
	18	52.1	78.2	44.8	67.4	33.7	50.7	31.2	46.9	25.8	38.8	20.1	30.3
	19	49.3	74.1	42.5	63.8	32.0	48.0	29.5	44.4	24.4	36.7	19.1	28.7
	20	46.9	70.4	40.3	60.6	30.4	45.6	28.1	42.2	23.2	34.9	18.1	27.2
	21	44.6	67.1	38.4	57.8	28.9	43.4	26.7	40.2	22.1	33.2	17.3	25.9
	22	42.6	64.0	36.7	55.1	27.6	41.5	25.5	38.4	21.1	31.7	16.5	24.8
	23	40.7	61.2	35.1	52.7	26.4	39.7	24.4	36.7	20.2	30.3	15.8	23.7
	24	39.0	58.7	33.6	50.5	25.3	38.0	23.4	35.2	19.3	29.1	15.1	22.7
	25	37.5	56.3	32.3	48.5	24.3	36.5	22.5	33.8	18.6	27.9	14.5	21.8
	26	36.0	54.2	31.0	46.6	23.3	35.1	21.6	32.5	17.9	26.8	13.9	20.9
	27	34.7	52.2	29.9	44.9	22.5	33.8	20.8	31.3	17.2	25.8	13.4	20.2
	28	33.5	50.3	28.8	43.3	21.7	32.6	20.0	30.1	16.6	24.9	12.9	19.4
	29	32.3	48.6	27.8	41.8	20.9	31.5	19.4	29.1	16.0	24.1	12.5	18.8
	30	31.2	46.9	26.9	40.4	20.2	30.4	18.7	28.1	15.5	23.3	12.1	18.2
	32	29.3	44.0	25.2	37.9	19.0	28.5	17.5	26.4	14.5	21.8	11.3	17.0
	34	27.6	41.4	23.7	35.7	17.9	26.8	16.5	24.8	13.7	20.5	10.7	16.0
	36	26.0	39.1	22.4	33.7	16.9	25.3	15.6	23.4	12.9	19.4	10.1	15.1
	38	24.7	37.1	21.2	31.9	16.0	24.0	14.8	22.2	12.2	18.4	9.54	14.3
	40	23.4	35.2	20.2	30.3	15.2	22.8	14.0	21.1	11.6	17.4	9.06	13.6
	42	22.3	33.5	19.2	28.9	14.5	21.7	13.4	20.1	11.1	16.6	8.63	13.0
	44	21.3	32.0	18.3	27.6	13.8	20.7	12.8	19.2	10.6	15.9	8.23	12.4
	46	20.4	30.6	17.5	26.4	13.2	19.8	12.2	18.3	10.1	15.2	7.88	11.8
	48	19.5	29.3	16.8	25.3	12.6	19.0	11.7	17.6	9.67	14.5	7.55	11.3
	50	18.7	28.2	16.1	24.3	12.1	18.2	11.2	16.9	9.29	14.0	7.25	10.9
	52	18.0	27.1	15.5	23.3	11.7	17.5	10.8	16.2	8.93	13.4	6.97	10.5
	54	17.4	26.1	14.9	22.5	11.2	16.9	10.4	15.6	8.60	12.9	6.71	10.1
	56	16.7	25.1	14.4	21.7	10.8	16.3	10.0	15.1	8.29	12.5	6.47	9.72
	58	16.2	24.3	13.9	20.9	10.5	15.7	9.68	14.5	8.01	12.0	6.25	9.39
	60	15.6	23.5	13.4	20.2	10.1	15.2	9.36	14.1	7.74	11.6	6.04	9.08
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	937	1410	807	1210	607	912	561	844	464	698	362	545
M_y/Ω_b	$\phi_b M_y$, kip-ft	104	156	90.3	136	73.5	110	61.2	92.0	50.0	75.2	42.4	63.7
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	117	176	101	152	75.9	114	70.2	105	58.0	87.2	45.3	68.1
BF_1/Ω_b	$\phi_b BF_1$, kips	8.56	12.9	7.27	10.9	7.20	10.8	9.58	14.4	9.72	14.6	9.72	14.6
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	23.0	34.6	20.8	31.2	17.9	26.9	16.8	25.2	14.5	21.8	12.6	19.0
V_n/Ω_v	$\phi_v V_{nx}$, kips	89.8	135	63.4	95.3	62.4	93.8	62.8	94.5	61.9	93.0	61.2	92.0
Z_x, in.^{3}		36.1		31.1		25.5		21.6		17.9		15.4	
L_p, ft		3.10		3.09		3.01		2.08		2.00		1.94	
L_y, ft		4.68		4.55		4.27		3.02		2.83		2.70	
L_r, ft		22.3		20.7		18.2		13.4		11.9		11.1	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W10–W8

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		W10×		W8×									
		12[f2]		67		58		48		40[f2]		35[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4	68.0	102										
	5	54.4	81.7			245	369					142	214
	6	45.3	68.1	282	425	242	363	195	294	162	243	140	210
	7	38.8	58.4	271	407	207	311	168	252	143	215	120	180
	8	34.0	51.1	237	356	181	272	147	221	125	188	105	158
	9	30.2	45.4	211	317	161	242	131	196	111	167	93.3	140
	10	27.2	40.9	190	285	145	218	118	177	100	151	84.0	126
	11	24.7	37.1	172	259	132	198	107	161	91.1	137	76.3	115
	12	22.7	34.0	158	238	121	182	98.0	147	83.5	126	70.0	105
	13	20.9	31.4	146	219	112	168	90.4	136	77.1	116	64.6	97.1
	14	19.4	29.2	135	204	104	156	84.0	126	71.6	108	60.0	90.1
	15	18.1	27.2	126	190	96.7	145	78.4	118	66.8	100	56.0	84.1
	16	17.0	25.5	119	178	90.6	136	73.5	110	62.6	94.1	52.5	78.9
	17	16.0	24.0	112	168	85.3	128	69.2	104	58.9	88.6	49.4	74.2
	18	15.1	22.7	105	158	80.6	121	65.3	98.2	55.7	83.7	46.6	70.1
	19	14.3	21.5	99.8	150	76.3	115	61.9	93.0	52.7	79.3	44.2	66.4
	20	13.6	20.4	94.8	143	72.5	109	58.8	88.3	50.1	75.3	42.0	63.1
	21	12.9	19.5	90.3	136	69.1	104	56.0	84.1	47.7	71.7	40.0	60.1
	22	12.4	18.6	86.2	130	65.9	99.1	53.4	80.3	45.5	68.5	38.2	57.4
	23	11.8	17.8	82.5	124	63.1	94.8	51.1	76.8	43.6	65.5	36.5	54.9
	24	11.3	17.0	79.0	119	60.4	90.8	49.0	73.6	41.8	62.8	35.0	52.6
	25	10.9	16.3	75.9	114	58.0	87.2	47.0	70.7	40.1	60.2	33.6	50.5
	26	10.5	15.7	73.0	110	55.8	83.8	45.2	68.0	38.5	57.9	32.3	48.5
	27	10.1	15.1	70.3	106	53.7	80.7	43.5	65.4	37.1	55.8	31.1	46.7
	28	9.71	14.6	67.7	102	51.8	77.8	42.0	63.1	35.8	53.8	30.0	45.1
	29	9.37	14.1	65.4	98.3	50.0	75.2	40.5	60.9	34.6	51.9	29.0	43.5
	30	9.06	13.6	63.2	95.0	48.3	72.7	39.2	58.9	33.4	50.2	28.0	42.1
	32	8.49	12.8	59.3	89.1	45.3	68.1	36.7	55.2	31.3	47.1	26.2	39.4
	34	8.00	12.0	55.8	83.9	42.7	64.1	34.6	52.0	29.5	44.3	24.7	37.1
	36	7.55	11.3	52.7	79.2	40.3	60.5	32.7	49.1	27.8	41.8	23.3	35.1
	38	7.15	10.8	49.9	75.0	38.2	57.4	30.9	46.5	26.4	39.6	22.1	33.2
	40	6.80	10.2	47.4	71.3	36.3	54.5	29.4	44.2	25.1	37.7	21.0	31.5
	42	6.47	9.73	45.2	67.9	34.5	51.9	28.0	42.1	23.9	35.9	20.0	30.0
	44	6.18	9.29	43.1	64.8	33.0	49.5	26.7	40.2	22.8	34.2	19.1	28.7
	46	5.91	8.88	41.2	62.0	31.5	47.4	25.6	38.4	21.8	32.7	18.3	27.4
	48	5.66	8.51	39.5	59.4	30.2	45.4	24.5	36.8	20.9	31.4	17.5	26.3
	50	5.44	8.17	37.9	57.0	29.0	43.6	23.5	35.3	20.0	30.1	16.8	25.2
	52	5.23	7.86	36.5	54.8	27.9	41.9	22.6	34.0	19.3	29.0	16.1	24.3
	54	5.03	7.57	35.1	52.8	26.9	40.4	21.8	32.7	18.6	27.9	15.5	23.4
	56	4.85	7.30	33.9	50.9	25.9	38.9	21.0	31.6	17.9	26.9	15.0	22.5
	58	4.69	7.04	32.7	49.2	25.0	37.6	20.3	30.5	17.3	26.0	14.5	21.8
	60	4.53	6.81	31.6	47.5	24.2	36.3	19.6	29.4	16.7	25.1	14.0	21.0
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	272	409	1900	2850	1450	2180	1180	1770	1000	1510	840	1260
M_y/Ω_b	$\phi_b M_y$, kip-ft	34.9	52.4	204	306	158	238	130	196	114	171	101	151
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	34.0	51.1	237	356	181	272	147	221	125	188	105	158
BF_1/Ω_b	$\phi_b BF_1$, kips	7.30	11.0	4.65	6.99	4.79	7.19	4.52	6.80	4.13	6.20	3.91	5.87
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	10.7	16.1	26.8	40.3	23.6	35.5	20.9	31.5	19.0	28.6	17.6	26.5
V_n/Ω_v	$\phi_v V_{nx}$, kips	35.7	53.6	141	212	123	184	97.7	147	80.9	122	71.1	107
Z_x, in.^{3}		12.4		73.1		55.9		45.3		39.2		34.5	
L_p, ft		1.96		4.76		4.62		4.52		4.49		4.45	
L_y, ft		2.68		12.0		9.39		8.24		7.79		7.35	
L_r, ft		10.6		77.1		57.3		47.7		43.5		39.3	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

W8

Shape		W8×											
		31[f2]		28[f2]		24[f2]		21		18[f2]		15	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4							114	172	96.2	145	86.4	130
	5	126	189	126	190	111	167	106	160	77.0	116	69.1	104
	6	117	176	110	166	94.7	142	88.6	133	64.1	96.4	57.6	86.5
	7	100	151	94.6	142	81.2	122	75.9	114	55.0	82.6	49.3	74.2
	8	87.8	132	82.8	124	71.0	107	66.4	99.9	48.1	72.3	43.2	64.9
	9	78.0	117	73.6	111	63.2	94.9	59.1	88.8	42.8	64.3	38.4	57.7
	10	70.2	106	66.2	99.5	56.8	85.4	53.1	79.9	38.5	57.8	34.5	51.9
	11	63.8	96.0	60.2	90.5	51.7	77.7	48.3	72.6	35.0	52.6	31.4	47.2
	12	58.5	88.0	55.2	82.9	47.4	71.2	44.3	66.6	32.1	48.2	28.8	43.3
	13	54.0	81.2	50.9	76.5	43.7	65.7	40.9	61.4	29.6	44.5	26.6	39.9
	14	50.2	75.4	47.3	71.1	40.6	61.0	38.0	57.1	27.5	41.3	24.7	37.1
	15	46.8	70.4	44.1	66.3	37.9	57.0	35.4	53.3	25.7	38.6	23.0	34.6
	16	43.9	66.0	41.4	62.2	35.5	53.4	33.2	49.9	24.0	36.1	21.6	32.4
	17	41.3	62.1	38.9	58.5	33.4	50.3	31.3	47.0	22.6	34.0	20.3	30.5
	18	39.0	58.6	36.8	55.3	31.6	47.5	29.5	44.4	21.4	32.1	19.2	28.8
	19	37.0	55.6	34.8	52.4	29.9	45.0	28.0	42.0	20.3	30.4	18.2	27.3
	20	35.1	52.8	33.1	49.8	28.4	42.7	26.6	39.9	19.2	28.9	17.3	26.0
	21	33.4	50.3	31.5	47.4	27.1	40.7	25.3	38.0	18.3	27.5	16.4	24.7
	22	31.9	48.0	30.1	45.2	25.8	38.8	24.2	36.3	17.5	26.3	15.7	23.6
	23	30.5	45.9	28.8	43.3	24.7	37.1	23.1	34.7	16.7	25.1	15.0	22.6
	24	29.3	44.0	27.6	41.5	23.7	35.6	22.1	33.3	16.0	24.1	14.4	21.6
	25	28.1	42.2	26.5	39.8	22.7	34.2	21.3	32.0	15.4	23.1	13.8	20.8
	26	27.0	40.6	25.5	38.3	21.9	32.9	20.4	30.7	14.8	22.2	13.3	20.0
	27	26.0	39.1	24.5	36.9	21.1	31.6	19.7	29.6	14.3	21.4	12.8	19.2
	28	25.1	37.7	23.6	35.5	20.3	30.5	19.0	28.5	13.7	20.7	12.3	18.5
	29	24.2	36.4	22.8	34.3	19.6	29.5	18.3	27.5	13.3	19.9	11.9	17.9
	30	23.4	35.2	22.1	33.2	18.9	28.5	17.7	26.6	12.8	19.3	11.5	17.3
	32	21.9	33.0	20.7	31.1	17.8	26.7	16.6	25.0	12.0	18.1	10.8	16.2
	34	20.7	31.0	19.5	29.3	16.7	25.1	15.6	23.5	11.3	17.0	10.2	15.3
	36	19.5	29.3	18.4	27.6	15.8	23.7	14.8	22.2	10.7	16.1	9.59	14.4
	38	18.5	27.8	17.4	26.2	15.0	22.5	14.0	21.0	10.1	15.2	9.09	13.7
	40	17.6	26.4	16.6	24.9	14.2	21.4	13.3	20.0	9.62	14.5	8.64	13.0
	42	16.7	25.1	15.8	23.7	13.5	20.3	12.7	19.0	9.16	13.8	8.22	12.4
	44	16.0	24.0	15.0	22.6	12.9	19.4	12.1	18.2	8.75	13.1	7.85	11.8
	46	15.3	22.9	14.4	21.6	12.4	18.6	11.6	17.4	8.37	12.6	7.51	11.3
	48	14.6	22.0	13.8	20.7	11.8	17.8	11.1	16.6	8.02	12.0	7.20	10.8
	50	14.0	21.1	13.2	19.9	11.4	17.1	10.6	16.0	7.70	11.6	6.91	10.4
	52	13.5	20.3	12.7	19.1	10.9	16.4	10.2	15.4	7.40	11.1	6.64	9.98
	54	13.0	19.5	12.3	18.4	10.5	15.8	9.84	14.8	7.13	10.7	6.40	9.61
	56	12.5	18.8	11.8	17.8	10.1	15.3	9.49	14.3	6.87	10.3	6.17	9.27
	58	12.1	18.2	11.4	17.2	9.80	14.7	9.16	13.8	6.63	9.97	5.96	8.95
	60	11.7	17.6	11.0	16.6	9.47	14.2	8.86	13.3	6.41	9.64	5.76	8.65
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	702	1060	662	995	568	854	531	799	385	578	345	519
M_y/Ω_b	$\phi_b M_y$, kip-ft	90.1	135	75.6	114	67.8	102	59.2	89.0	47.2	70.9	37.6	56.5
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	87.8	132	82.8	124	71.0	107	66.4	99.9	48.1	72.3	43.2	64.9
BF_1/Ω_b	$\phi_b BF_1$, kips	3.65	5.49	4.15	6.24	3.84	5.77	4.83	7.26	4.76	7.15	5.85	8.79
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	16.4	24.6	15.0	22.5	13.9	20.9	13.5	20.3	11.5	17.3	10.2	15.4
V_n/Ω_v	$\phi_v V_{nx}$, kips	62.8	94.3	63.2	95.1	55.6	83.5	57.1	85.9	56.0	84.1	55.9	84.0
Z_x, in.^{3}		30.7		26.0		23.2		20.5		16.4		13.3	
L_p, ft		4.42		3.59		3.56		2.84		2.76		2.07	
L_y, ft		7.03		5.69		5.49		4.33		4.02		3.02	
L_r, ft		36.0		29.0		27.0		20.9		18.0		13.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

W8–W6

Table 7-6 (continued)

Maximum Total Uniform Load, kips

W-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

Shape		W8×				W6×							
		13[f2]		10[f2]		25		20[f2]		16		15[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	110	165									73.9	111
	3	89.1	134	65.4	98.2					88.0	132	64.3	96.7
	4	66.8	100	50.8	76.3	112	168	86.9	131	75.0	113	48.3	72.5
	5	53.4	80.3	40.6	61.0	96.4	145	72.9	110	60.0	90.2	38.6	58.0
	6	44.5	66.9	33.8	50.9	80.3	121	60.7	91.3	50.0	75.2	32.2	48.3
	7	38.2	57.4	29.0	43.6	68.9	103	52.0	78.2	42.9	64.4	27.6	41.4
	8	33.4	50.2	25.4	38.2	60.2	90.5	45.5	68.4	37.5	56.4	24.1	36.3
	9	29.7	44.6	22.6	33.9	53.6	80.5	40.5	60.8	33.3	50.1	21.4	32.2
	10	26.7	40.2	20.3	30.5	48.2	72.4	36.4	54.8	30.0	45.1	19.3	29.0
	11	24.3	36.5	18.5	27.7	43.8	65.9	33.1	49.8	27.3	41.0	17.5	26.4
	12	22.3	33.5	16.9	25.4	40.2	60.4	30.4	45.6	25.0	37.6	16.1	24.2
	13	20.6	30.9	15.6	23.5	37.1	55.7	28.0	42.1	23.1	34.7	14.8	22.3
	14	19.1	28.7	14.5	21.8	34.4	51.7	26.0	39.1	21.4	32.2	13.8	20.7
	15	17.8	26.8	13.5	20.3	32.1	48.3	24.3	36.5	20.0	30.1	12.9	19.3
	16	16.7	25.1	12.7	19.1	30.1	45.3	22.8	34.2	18.8	28.2	12.1	18.1
	17	15.7	23.6	11.9	18.0	28.4	42.6	21.4	32.2	17.6	26.5	11.4	17.1
	18	14.8	22.3	11.3	17.0	26.8	40.2	20.2	30.4	16.7	25.1	10.7	16.1
	19	14.1	21.1	10.7	16.1	25.4	38.1	19.2	28.8	15.8	23.7	10.2	15.3
	20	13.4	20.1	10.2	15.3	24.1	36.2	18.2	27.4	15.0	22.5	9.65	14.5
	21	12.7	19.1	9.67	14.5	23.0	34.5	17.3	26.1	14.3	21.5	9.19	13.8
	22	12.1	18.3	9.23	13.9	21.9	32.9	16.6	24.9	13.6	20.5	8.77	13.2
	23	11.6	17.5	8.83	13.3	21.0	31.5	15.8	23.8	13.0	19.6	8.39	12.6
	24	11.1	16.7	8.46	12.7	20.1	30.2	15.2	22.8	12.5	18.8	8.04	12.1
	25	10.7	16.1	8.12	12.2	19.3	29.0	14.6	21.9	12.0	18.0	7.72	11.6
	26	10.3	15.4	7.81	11.7	18.5	27.9	14.0	21.1	11.5	17.3	7.42	11.2
	27	9.90	14.9	7.52	11.3	17.9	26.8	13.5	20.3	11.1	16.7	7.15	10.7
	28	9.54	14.3	7.25	10.9	17.2	25.9	13.0	19.6	10.7	16.1	6.89	10.4
	29	9.22	13.9	7.00	10.5	16.6	25.0	12.6	18.9	10.3	15.5	6.66	10.0
	30	8.91	13.4	6.77	10.2	16.1	24.1	12.1	18.3	10.0	15.0	6.43	9.67
	32	8.35	12.6	6.35	9.54	15.1	22.6	11.4	17.1	9.38	14.1	6.03	9.07
	34	7.86	11.8	5.97	8.98	14.2	21.3	10.7	16.1	8.82	13.3	5.68	8.53
	36	7.42	11.2	5.64	8.48	13.4	20.1	10.1	15.2	8.33	12.5	5.36	8.06
	38	7.03	10.6	5.34	8.03	12.7	19.1	9.59	14.4	7.90	11.9	5.08	7.63
	40	6.68	10.0	5.08	7.63	12.0	18.1	9.11	13.7	7.50	11.3	4.83	7.25
	42	6.36	9.56	4.84	7.27	11.5	17.2	8.67	13.0	7.14	10.7	4.60	6.91
	44	6.07	9.13	4.62	6.94	11.0	16.5	8.28	12.4	6.82	10.2	4.39	6.59
	46	5.81	8.73	4.42	6.64	10.5	15.7	7.92	11.9	6.52	9.80	4.20	6.31
	48	5.57	8.37	4.23	6.36	10.0	15.1	7.59	11.4	6.25	9.39	4.02	6.04
	50	5.34	8.03	4.06	6.10	9.64	14.5	7.29	11.0	6.00	9.02	3.86	5.80
	52	5.14	7.72	3.91	5.87	9.27	13.9	7.01	10.5	5.77	8.67	3.71	5.58
	54	4.95	7.44	3.76	5.65	8.93	13.4	6.75	10.1	5.56	8.35	3.57	5.37
	56	4.77	7.17	3.63	5.45	8.61	12.9	6.51	9.78	5.36	8.05	3.45	5.18
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	267	402	203	305	482	724	364	548	300	451	193	290
M_y/Ω_b	$\phi_b M_y$, kip-ft	31.4	47.2	26.0	39.1	53.4	80.2	43.7	65.6	33.0	49.5	30.0	45.1
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	33.4	50.2	25.4	38.2	60.2	90.5	45.5	68.4	37.5	56.4	24.1	36.3
BF_1/Ω_b	$\phi_b BF_1$, kips	5.79	8.71	4.53	6.80	2.59	3.90	2.34	3.52	2.97	4.46	2.08	3.12
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	8.90	13.4	7.69	11.6	9.80	14.7	8.62	13.0	7.48	11.2	6.71	10.1
V_n/Ω_v	$\phi_v V_{nx}$, kips	55.0	82.7	32.7	49.1	55.9	84.0	43.4	65.3	44.0	66.1	36.9	55.5
Z_x, in.^{3}		11.2		9.13		18.6		15.0		11.6		10.3	
L_p, ft		2.00		2.01		3.38		3.33		2.20		3.23	
L_y, ft		2.87		2.80		6.03		5.47		3.73		4.79	
L_r, ft		12.5		11.4		34.4		29.1		20.5		22.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength

Table 7-6 (continued)

Duplex Stainless Steel

$F_y = 65$ ksi

Maximum Total Uniform Load, kips

W-Shapes (Welded)

W6–W4

Shape		W6×				W5×				W4×	
		12[f2]		9[f2]		19		16[f2]		13	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	74.4	112	57.3	86.1					65.3	98.1
	3	69.1	104	46.8	70.4	80.8	121	70.2	106	54.1	81.3
	4	51.8	77.9	35.1	52.8	71.9	108	59.7	89.8	40.6	61.0
	5	41.5	62.3	28.1	42.2	57.5	86.5	47.8	71.8	32.4	48.8
	6	34.6	51.9	23.4	35.2	48.0	72.1	39.8	59.9	27.0	40.6
	7	29.6	44.5	20.1	30.2	41.1	61.8	34.1	51.3	23.2	34.8
	8	25.9	38.9	17.6	26.4	36.0	54.1	29.9	44.9	20.3	30.5
	9	23.0	34.6	15.6	23.5	32.0	48.0	26.6	39.9	18.0	27.1
	10	20.7	31.2	14.1	21.1	28.8	43.2	23.9	35.9	16.2	24.4
	11	18.8	28.3	12.8	19.2	26.2	39.3	21.7	32.6	14.7	22.2
	12	17.3	26.0	11.7	17.6	24.0	36.0	19.9	29.9	13.5	20.3
	13	15.9	24.0	10.8	16.2	22.1	33.3	18.4	27.6	12.5	18.8
	14	14.8	22.3	10.0	15.1	20.6	30.9	17.1	25.7	11.6	17.4
	15	13.8	20.8	9.37	14.1	19.2	28.8	15.9	23.9	10.8	16.3
	16	13.0	19.5	8.78	13.2	18.0	27.0	14.9	22.4	10.1	15.2
	17	12.2	18.3	8.26	12.4	16.9	25.4	14.1	21.1	9.54	14.3
	18	11.5	17.3	7.81	11.7	16.0	24.0	13.3	20.0	9.01	13.5
	19	10.9	16.4	7.39	11.1	15.1	22.8	12.6	18.9	8.54	12.8
	20	10.4	15.6	7.03	10.6	14.4	21.6	11.9	18.0	8.11	12.2
	21	9.87	14.8	6.69	10.1	13.7	20.6	11.4	17.1	7.73	11.6
	22	9.42	14.2	6.39	9.60	13.1	19.7	10.9	16.3	7.37	11.1
	23	9.01	13.5	6.11	9.18	12.5	18.8	10.4	15.6	7.05	10.6
	24	8.64	13.0	5.85	8.80	12.0	18.0	9.96	15.0	6.76	10.2
	25	8.29	12.5	5.62	8.45	11.5	17.3	9.56	14.4	6.49	9.75
	26	7.97	12.0	5.40	8.12	11.1	16.6	9.19	13.8	6.24	9.38
	27	7.68	11.5	5.20	7.82	10.7	16.0	8.85	13.3	6.01	9.03
	28	7.40	11.1	5.02	7.54	10.3	15.4	8.53	12.8	5.79	8.71
	29	7.15	10.7	4.84	7.28	9.92	14.9	8.24	12.4	5.59	8.41
	30	6.91	10.4	4.68	7.04	9.59	14.4	7.97	12.0	5.41	8.13
	32	6.48	9.74	4.39	6.60	8.99	13.5	7.47	11.2	5.07	7.62
	34	6.10	9.16	4.13	6.21	8.46	12.7	7.03	10.6	4.77	7.17
	36	5.76	8.65	3.90	5.87	7.99	12.0	6.64	9.98	4.51	6.77
	38	5.46	8.20	3.70	5.56	7.57	11.4	6.29	9.45	4.27	6.42
	40	5.18	7.79	3.51	5.28	7.19	10.8	5.97	8.98	4.06	6.10
	42	4.94	7.42	3.35	5.03	6.85	10.3	5.69	8.55	3.86	5.81
	44	4.71	7.08	3.19	4.80	6.54	9.83	5.43	8.16	3.69	5.54
	46	4.51	6.77	3.05	4.59	6.25	9.40	5.19	7.81	3.53	5.30
	48	4.32	6.49	2.93	4.40	5.99	9.01	4.98	7.48	3.38	5.08
	50	4.15	6.23	2.81	4.22	5.75	8.65	4.78	7.18	3.24	4.88
	52	3.99	5.99	2.70	4.06	5.53	8.32	4.60	6.91	3.12	4.69
	54	3.84	5.77	2.60	3.91	5.33	8.01	4.43	6.65	3.00	4.52
	56	3.70	5.56	2.51	3.77	5.14	7.72	4.27	6.41	2.90	4.35
Beam Properties											
W_c/Ω_b	$\phi_b W_c$, kip-ft	207	312	141	211	288	432	239	359	162	244
M_y/Ω_b	$\phi_b M_y$, kip-ft	23.2	34.8	18.0	27.1	31.6	47.6	26.8	40.3	17.6	26.5
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	25.9	38.9	17.6	26.4	36.0	54.1	29.9	44.9	20.3	30.5
BF_1/Ω_b	$\phi_b BF_1$, kips	2.77	4.17	2.41	3.63	1.65	2.49	1.57	2.37	1.10	1.66
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	5.94	8.92	4.97	7.47	5.93	8.91	5.33	8.02	3.47	5.21
V_n/Ω_v	$\phi_v V_{nx}$, kips	37.2	55.9	28.6	43.1	40.4	60.7	35.1	52.8	32.6	49.1
Z_x, in.^{3}		8.09		6.25		11.1		9.32		6.25	
L_p, ft		2.12		2.07		2.82		2.78		2.27	
L_y, ft		3.23		3.00		5.43		4.94		4.66	
L_r, ft		15.6		13.3		32.4		28.2		28.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-6 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength

S24–S20

Table 7-7
Maximum Total Uniform Load, kips
S-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		S24×										S20×	
		121		106		100		90		80		96	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6					466	700					394	592
	7	475	714	396	595	441	662	388	583			345	519
	8	425	639	395	594	385	579	359	539	303	455	302	454
	9	378	568	351	528	343	515	319	479	295	443	268	404
	10	340	511	316	475	308	464	287	431	265	399	242	363
	11	309	465	287	432	280	421	261	392	241	362	220	330
	12	284	426	264	396	257	386	239	359	221	332	201	303
	13	262	393	243	366	237	357	221	332	204	307	186	279
	14	243	365	226	339	220	331	205	308	189	285	173	259
	15	227	341	211	317	206	309	191	288	177	266	161	242
	16	213	320	198	297	193	290	179	270	166	249	151	227
	17	200	301	186	280	181	273	169	254	156	235	142	214
	18	189	284	176	264	171	258	159	240	147	222	134	202
	19	179	269	166	250	162	244	151	227	140	210	127	191
	20	170	256	158	238	154	232	143	216	133	199	121	182
	21	162	244	151	226	147	221	137	205	126	190	115	173
	22	155	232	144	216	140	211	130	196	121	181	110	165
	23	148	222	137	207	134	202	125	188	115	173	105	158
	24	142	213	132	198	128	193	120	180	111	166	101	151
	25	136	205	126	190	123	185	115	173	106	159	96.6	145
	26	131	197	122	183	119	178	110	166	102	153	92.9	140
	27	126	189	117	176	114	172	106	160	98.2	148	89.5	135
	28	122	183	113	170	110	166	102	154	94.7	142	86.3	130
	29	117	176	109	164	106	160	99.0	149	91.5	137	83.3	125
	30	113	170	105	158	103	155	95.7	144	88.4	133	80.5	121
	32	106	160	98.8	149	96.4	145	89.7	135	82.9	125	75.5	113
	34	100	150	93.0	140	90.7	136	84.4	127	78.0	117	71.1	107
	36	94.5	142	87.8	132	85.7	129	79.7	120	73.7	111	67.1	101
	38	89.5	135	83.2	125	81.2	122	75.5	114	69.8	105	63.6	95.6
	40	85.1	128	79.1	119	77.1	116	71.7	108	66.3	99.7	60.4	90.8
	42	81.0	122	75.3	113	73.4	110	68.3	103	63.2	94.9	57.5	86.5
	44	77.3	116	71.9	108	70.1	105	65.2	98.0	60.3	90.6	54.9	82.5
	46	74.0	111	68.7	103	67.0	101	62.4	93.8	57.7	86.7	52.5	78.9
	48	70.9	107	65.9	99.0	64.2	96.6	59.8	89.9	55.3	83.1	50.3	75.7
	50	68.0	102	63.2	95.1	61.7	92.7	57.4	86.3	53.1	79.7	48.3	72.6
	52	65.4	98.3	60.8	91.4	59.3	89.1	55.2	82.9	51.0	76.7	46.5	69.8
	54	63.0	94.7	58.6	88.0	57.1	85.8	53.1	79.9	49.1	73.8	44.7	67.3
	56	60.8	91.3	56.5	84.9	55.1	82.8	51.2	77.0	47.4	71.2	43.1	64.8
	58	58.7	88.2	54.5	81.9	53.2	79.9	49.5	74.4	45.7	68.7	41.7	62.6
	60	56.7	85.2	52.7	79.2	51.4	77.3	47.8	71.9	44.2	66.5	40.3	60.5
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	3400	5110	3160	4750	3080	4640	2870	4310	2650	3990	2420	3630
M_y/Ω_b	$\phi_b M_y$, kip-ft	359	539	338	508	322	485	305	458	286	431	254	382
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	425	639	395	594	385	579	359	539	332	498	302	454
BF_1/Ω_b	$\phi_b BF_1$, kips	24.7	37.2	23.1	34.7	25.5	38.3	23.7	35.7	21.0	31.6	15.3	23.0
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	56.4	84.7	54.6	82.1	52.5	78.9	50.9	76.5	48.8	73.4	38.6	57.9
V_n/Ω_v	$\phi_v V_{nx}$, kips	238	357	198	298	233	350	194	292	152	228	197	296
Z_x, in.^{3}		284		264		258		240		222		202	
L_p, ft		4.75		4.72		4.25		4.25		4.26		4.33	
L_y, ft		7.44		7.20		6.72		6.53		6.40		7.43	
L_r, ft		49.3		46.3		45.1		42.4		40.6		53.3	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-7 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Table 7-7 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

S20–S15

Shape		S20×						S18×				S15×	
		86		75		66		70		54.7		50	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4							349	525	210	315	194	291
	5			323	486			316	475	192	289	155	233
	6	328	493	291	437	259	389	263	396	160	241	129	194
	7	323	485	249	375	228	342	226	339	137	206	111	167
	8	282	424	218	328	199	300	197	297	120	181	96.9	146
	9	251	377	194	291	177	266	176	264	107	161	86.2	130
	10	226	339	175	262	159	240	158	237	96.1	145	77.6	117
	11	205	309	159	238	145	218	144	216	87.4	131	70.5	106
	12	188	283	145	219	133	200	132	198	80.1	120	64.6	97.1
	13	174	261	134	202	123	184	122	183	74.0	111	59.7	89.7
	14	161	242	125	187	114	171	113	170	68.7	103	55.4	83.3
	15	151	226	116	175	106	160	105	158	64.1	96.3	51.7	77.7
	16	141	212	109	164	99.7	150	98.7	148	60.1	90.3	48.5	72.9
	17	133	200	103	154	93.8	141	92.9	140	56.6	85.0	45.6	68.6
	18	125	189	97.0	146	88.6	133	87.8	132	53.4	80.3	43.1	64.8
	19	119	179	91.9	138	83.9	126	83.1	125	50.6	76.1	40.8	61.4
	20	113	170	87.3	131	79.7	120	79.0	119	48.1	72.3	38.8	58.3
	21	108	162	83.1	125	75.9	114	75.2	113	45.8	68.8	36.9	55.5
	22	103	154	79.3	119	72.5	109	71.8	108	43.7	65.7	35.3	53.0
	23	98.2	148	75.9	114	69.3	104	68.7	103	41.8	62.8	33.7	50.7
	24	94.1	141	72.7	109	66.4	99.9	65.8	98.9	40.1	60.2	32.3	48.6
	25	90.3	136	69.8	105	63.8	95.9	63.2	95.0	38.5	57.8	31.0	46.6
	26	86.9	131	67.1	101	61.3	92.2	60.8	91.3	37.0	55.6	29.8	44.8
	27	83.6	126	64.6	97.2	59.1	88.8	58.5	87.9	35.6	53.5	28.7	43.2
	28	80.7	121	62.3	93.7	57.0	85.6	56.4	84.8	34.3	51.6	27.7	41.6
	29	77.9	117	60.2	90.5	55.0	82.7	54.5	81.9	33.2	49.8	26.7	40.2
	30	75.3	113	58.2	87.4	53.2	79.9	52.7	79.1	32.0	48.2	25.9	38.9
	32	70.6	106	54.5	82.0	49.8	74.9	49.4	74.2	30.0	45.2	24.2	36.4
	34	66.4	99.8	51.3	77.2	46.9	70.5	46.5	69.8	28.3	42.5	22.8	34.3
	36	62.7	94.3	48.5	72.9	44.3	66.6	43.9	66.0	26.7	40.1	21.5	32.4
	38	59.4	89.3	45.9	69.0	42.0	63.1	41.6	62.5	25.3	38.0	20.4	30.7
	40	56.5	84.9	43.6	65.6	39.9	59.9	39.5	59.4	24.0	36.1	19.4	29.1
	42	53.8	80.8	41.6	62.5	38.0	57.1	37.6	56.5	22.9	34.4	18.5	27.8
	44	51.3	77.1	39.7	59.6	36.2	54.5	35.9	54.0	21.9	32.8	17.6	26.5
	46	49.1	73.8	37.9	57.0	34.7	52.1	34.3	51.6	20.9	31.4	16.9	25.3
	48	47.1	70.7	36.4	54.6	33.2	49.9	32.9	49.5	20.0	30.1	16.2	24.3
	50	45.2	67.9	34.9	52.5	31.9	47.9	31.6	47.5	19.2	28.9	15.5	23.3
	52	43.4	65.3	33.6	50.4	30.7	46.1	30.4	45.7	18.5	27.8	14.9	22.4
	54	41.8	62.9	32.3	48.6	29.5	44.4	29.3	44.0	17.8	26.8	14.4	21.6
	56	40.3	60.6	31.2	46.8	28.5	42.8	28.2	42.4	17.2	25.8	13.8	20.8
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	2260	3390	1750	2620	1590	2400	1580	2370	961	1450	776	1170
M_y/Ω_b	$\phi_b M_y$, kip-ft	241	362	182	274	170	255	163	245	100	151	79.8	120
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	282	424	218	328	199	300	197	297	120	181	96.9	146
BF_1/Ω_b	$\phi_b BF_1$, kips	14.5	21.9	17.7	26.6	16.3	24.4	13.5	20.3	14.3	21.5	9.57	14.4
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	37.6	56.5	32.0	48.1	30.9	46.4	26.6	40.0	20.2	30.4	14.7	22.1
V_n/Ω_v	$\phi_v V_{nx}$, kips	164	247	162	243	129	194	175	262	105	157	109	163
Z_x, in.^{3}		189		146		133		132		80.3		64.8	
L_p, ft		4.31		3.70		3.71		3.60		3.35		3.13	
L_y, ft		7.14		5.72		5.53		6.17		4.73		4.93	
L_r, ft		49.9		37.4		34.6		44.2		27.3		32.9	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-7 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

S15–S10

Table 7-7 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		S15×		S12×								S10×	
		42.9		50		40.8		35		31.8		35	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2											162	243
	3			233	350			140	210			144	217
	4			182	273	140	210	137	206	109	163	108	163
	5	159	239	145	218	121	181	110	165	102	153	86.5	130
	6	137	206	121	182	100	151	91.5	138	84.6	127	72.1	108
	7	118	177	104	156	86.1	129	78.5	118	72.5	109	61.8	92.9
	8	103	155	90.8	136	75.3	113	68.7	103	63.5	95.4	54.1	81.3
	9	91.5	138	80.7	121	67.0	101	61.0	91.7	56.4	84.8	48.1	72.2
	10	82.4	124	72.6	109	60.3	90.6	54.9	82.6	50.8	76.3	43.3	65.0
	11	74.9	113	66.0	99.2	54.8	82.4	49.9	75.0	46.2	69.4	39.3	59.1
	12	68.7	103	60.5	90.9	50.2	75.5	45.8	68.8	42.3	63.6	36.0	54.2
	13	63.4	95.3	55.9	83.9	46.4	69.7	42.2	63.5	39.1	58.7	33.3	50.0
	14	58.8	88.4	51.9	77.9	43.0	64.7	39.2	59.0	36.3	54.5	30.9	46.4
	15	54.9	82.6	48.4	72.8	40.2	60.4	36.6	55.0	33.8	50.9	28.8	43.3
	16	51.5	77.4	45.4	68.2	37.7	56.6	34.3	51.6	31.7	47.7	27.0	40.6
	17	48.5	72.8	42.7	64.2	35.5	53.3	32.3	48.6	29.9	44.9	25.4	38.2
	18	45.8	68.8	40.3	60.6	33.5	50.3	30.5	45.9	28.2	42.4	24.0	36.1
	19	43.4	65.2	38.2	57.4	31.7	47.7	28.9	43.4	26.7	40.2	22.8	34.2
	20	41.2	61.9	36.3	54.6	30.1	45.3	27.5	41.3	25.4	38.2	21.6	32.5
	21	39.2	59.0	34.6	52.0	28.7	43.1	26.2	39.3	24.2	36.3	20.6	31.0
	22	37.4	56.3	33.0	49.6	27.4	41.2	25.0	37.5	23.1	34.7	19.7	29.6
	23	35.8	53.8	31.6	47.4	26.2	39.4	23.9	35.9	22.1	33.2	18.8	28.3
	24	34.3	51.6	30.3	45.5	25.1	37.7	22.9	34.4	21.2	31.8	18.0	27.1
	25	33.0	49.5	29.0	43.7	24.1	36.2	22.0	33.0	20.3	30.5	17.3	26.0
	26	31.7	47.6	27.9	42.0	23.2	34.8	21.1	31.8	19.5	29.3	16.6	25.0
	27	30.5	45.9	26.9	40.4	22.3	33.6	20.3	30.6	18.8	28.3	16.0	24.1
	28	29.4	44.2	25.9	39.0	21.5	32.4	19.6	29.5	18.1	27.3	15.4	23.2
	29	28.4	42.7	25.0	37.6	20.8	31.2	18.9	28.5	17.5	26.3	14.9	22.4
	30	27.5	41.3	24.2	36.4	20.1	30.2	18.3	27.5	16.9	25.4	14.4	21.7
	32	25.7	38.7	22.7	34.1	18.8	28.3	17.2	25.8	15.9	23.8	13.5	20.3
	34	24.2	36.4	21.4	32.1	17.7	26.6	16.2	24.3	14.9	22.4	12.7	19.1
	36	22.9	34.4	20.2	30.3	16.7	25.2	15.3	22.9	14.1	21.2	12.0	18.1
	38	21.7	32.6	19.1	28.7	15.9	23.8	14.5	21.7	13.4	20.1	11.4	17.1
	40	20.6	31.0	18.2	27.3	15.1	22.6	13.7	20.6	12.7	19.1	10.8	16.3
	42	19.6	29.5	17.3	26.0	14.3	21.6	13.1	19.7	12.1	18.2	10.3	15.5
	44	18.7	28.1	16.5	24.8	13.7	20.6	12.5	18.8	11.5	17.3	9.83	14.8
	46	17.9	26.9	15.8	23.7	13.1	19.7	11.9	17.9	11.0	16.6	9.40	14.1
	48	17.2	25.8	15.1	22.7	12.6	18.9	11.4	17.2	10.6	15.9	9.01	13.5
	50	16.5	24.8	14.5	21.8	12.1	18.1	11.0	16.5	10.2	15.3	8.65	13.0
	52	15.8	23.8	14.0	21.0	11.6	17.4	10.6	15.9	9.76	14.7	8.32	12.5
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	824	1240	726	1090	603	906	549	826	508	763	433	650
M_y/Ω_b	$\phi_b M_y$, kip-ft	88.7	133	74.7	112	64.6	97.2	58.5	88.0	55.1	82.9	44.8	67.3
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	103	155	90.8	136	75.3	113	68.7	103	63.5	95.4	54.1	81.3
BF_1/Ω_b	$\phi_b BF_1$, kips	7.91	11.9	4.29	6.45	4.41	6.63	4.81	7.24	4.41	6.63	2.86	4.30
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	16.3	24.4	11.1	16.7	10.9	16.3	10.3	15.5	10.0	15.1	7.01	10.5
V_n/Ω_v	$\phi_v V_{nx}$, kips	79.5	120	116	175	69.8	105	69.8	105	54.3	81.6	80.8	122
Z_x, in.^{3}		68.8		60.6		50.3		45.9		42.4		36.1	
L_p, ft		3.33		3.24		3.24		3.08		3.09		2.92	
L_y, ft		5.14		6.98		5.66		5.18		4.98		6.17	
L_r, ft		33.6		54.9		41.1		36.6		34.0		48.4	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-7 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-7 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

S10–S5

Shape		S10×		S8×				S6×				S5×	
		25.4		23		18.4		17.25		12.5		10	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2			93.1	140			61.2	92.0	34.1	51.3	28.5	42.8
	3			75.0	113	57.9	87.1	40.8	61.3	32.5	48.8	21.8	32.7
	4	80.8	122	56.2	84.5	48.1	72.3	30.6	46.0	24.3	36.6	16.3	24.5
	5	68.2	103	45.0	67.6	38.5	57.8	24.5	36.8	19.5	29.3	13.1	19.6
	6	56.8	85.4	37.5	56.3	32.0	48.2	20.4	30.7	16.2	24.4	10.9	16.4
	7	48.7	73.2	32.1	48.3	27.5	41.3	17.5	26.3	13.9	20.9	9.33	14.0
	8	42.6	64.1	28.1	42.2	24.0	36.1	15.3	23.0	12.2	18.3	8.16	12.3
	9	37.9	56.9	25.0	37.6	21.4	32.1	13.6	20.4	10.8	16.3	7.26	10.9
	10	34.1	51.3	22.5	33.8	19.2	28.9	12.2	18.4	9.74	14.6	6.53	9.82
	11	31.0	46.6	20.4	30.7	17.5	26.3	11.1	16.7	8.85	13.3	5.94	8.92
	12	28.4	42.7	18.7	28.2	16.0	24.1	10.2	15.3	8.11	12.2	5.44	8.18
	13	26.2	39.4	17.3	26.0	14.8	22.2	9.41	14.2	7.49	11.3	5.02	7.55
	14	24.4	36.6	16.1	24.1	13.7	20.6	8.74	13.1	6.95	10.5	4.66	7.01
	15	22.7	34.2	15.0	22.5	12.8	19.3	8.16	12.3	6.49	9.76	4.35	6.54
	16	21.3	32.0	14.1	21.1	12.0	18.1	7.65	11.5	6.09	9.15	4.08	6.14
	17	20.1	30.1	13.2	19.9	11.3	17.0	7.20	10.8	5.73	8.61	3.84	5.77
	18	18.9	28.5	12.5	18.8	10.7	16.1	6.80	10.2	5.41	8.13	3.63	5.45
	19	17.9	27.0	11.8	17.8	10.1	15.2	6.44	9.68	5.12	7.70	3.44	5.17
	20	17.0	25.6	11.2	16.9	9.61	14.5	6.12	9.20	4.87	7.32	3.27	4.91
	21	16.2	24.4	10.7	16.1	9.16	13.8	5.83	8.76	4.64	6.97	3.11	4.67
	22	15.5	23.3	10.2	15.4	8.74	13.1	5.56	8.36	4.43	6.65	2.97	4.46
	23	14.8	22.3	9.78	14.7	8.36	12.6	5.32	8.00	4.23	6.36	2.84	4.27
	24	14.2	21.4	9.37	14.1	8.01	12.0	5.10	7.66	4.06	6.10	2.72	4.09
	25	13.6	20.5	8.99	13.5	7.69	11.6	4.90	7.36	3.89	5.85	2.61	3.93
	26	13.1	19.7	8.65	13.0	7.40	11.1	4.71	7.08	3.74	5.63	2.51	3.78
	27	12.6	19.0	8.33	12.5	7.12	10.7	4.53	6.81	3.61	5.42	2.42	3.64
	28	12.2	18.3	8.03	12.1	6.87	10.3	4.37	6.57	3.48	5.23	2.33	3.51
	29	11.8	17.7	7.75	11.7	6.63	9.97	4.22	6.34	3.36	5.05	2.25	3.38
	30	11.4	17.1	7.50	11.3	6.41	9.63	4.08	6.13	3.25	4.88	2.18	3.27
	32	10.7	16.0	7.03	10.6	6.01	9.03	3.82	5.75	3.04	4.57	2.04	3.07
	34	10.0	15.1	6.61	9.94	5.66	8.50	3.60	5.41	2.86	4.30	1.92	2.89
	36	9.47	14.2	6.25	9.39	5.34	8.03	3.40	5.11	2.70	4.07	1.81	2.73
	38	8.97	13.5	5.92	8.89	5.06	7.61	3.22	4.84	2.56	3.85	1.72	2.58
	40	8.52	12.8	5.62	8.45	4.81	7.23	3.06	4.60	2.43	3.66	1.63	2.45
	42	8.12	12.2	5.35	8.05	4.58	6.88	2.91	4.38	2.32	3.48	1.55	2.34
	44	7.75	11.6	5.11	7.68	4.37	6.57	2.78	4.18	2.21	3.33	1.48	2.23
	46	7.41	11.1	4.89	7.35	4.18	6.28	2.66	4.00	2.12	3.18	1.42	2.13
	48	7.10	10.7	4.68	7.04	4.01	6.02	2.55	3.83	2.03	3.05	1.36	2.05
	50	6.82	10.3	4.50	6.76	3.85	5.78	2.45	3.68	1.95	2.93	1.31	1.96
	52	6.56	9.86	4.32	6.50	3.70	5.56	2.35	3.54	1.87	2.81	1.26	1.89
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	341	513	225	338	192	289	122	184	97.4	146	65.3	98.2
M_y/Ω_b	$\phi_b M_y$, kip-ft	37.2	55.9	23.6	35.5	20.9	31.5	12.8	19.2	10.7	16.0	7.10	10.7
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	42.6	64.1	28.1	42.2	24.0	36.1	15.3	23.0	12.2	18.3	8.16	12.3
BF_1/Ω_b	$\phi_b BF_1$, kips	2.79	4.19	1.81	2.72	1.75	2.63	0.841	1.26	0.858	1.29	0.575	0.865
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	6.75	10.1	4.07	6.12	3.96	5.95	2.12	3.18	2.06	3.09	1.37	2.06
V_n/Ω_v	$\phi_v V_{nx}$, kips	40.4	60.8	46.6	70.0	29.0	43.5	34.9	52.5	17.1	25.7	14.2	21.4
Z_x, in.^{3}		28.5		18.8		16.1		10.2		8.13		5.45	
L_p, ft		2.91		2.51		2.50		2.17		2.12		1.91	
L_y, ft		4.86		4.98		4.28		5.20		3.89		3.76	
L_r, ft		34.1		38.3		30.6		41.8		28.9		28.8	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-7 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

S4–S3

Table 7-7 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		S4×				S3×			
		9.5		7.7		7.5		5.7	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	23.0	34.6	18.4	27.7	13.6	20.5	11.3	16.9
	3	15.3	23.1	13.2	19.8	9.07	13.6	7.51	11.3
	4	11.5	17.3	9.88	14.8	6.80	10.2	5.63	8.46
	5	9.20	13.8	7.90	11.9	5.44	8.18	4.51	6.77
	6	7.67	11.5	6.58	9.90	4.54	6.82	3.75	5.64
	7	6.57	9.88	5.64	8.48	3.89	5.84	3.22	4.84
	8	5.75	8.65	4.94	7.42	3.40	5.11	2.82	4.23
	9	5.11	7.68	4.39	6.60	3.02	4.55	2.50	3.76
	10	4.60	6.92	3.95	5.94	2.72	4.09	2.25	3.39
	11	4.18	6.29	3.59	5.40	2.47	3.72	2.05	3.08
	12	3.83	5.76	3.29	4.95	2.27	3.41	1.88	2.82
	13	3.54	5.32	3.04	4.57	2.09	3.15	1.73	2.60
	14	3.29	4.94	2.82	4.24	1.94	2.92	1.61	2.42
	15	3.07	4.61	2.63	3.96	1.81	2.73	1.50	2.26
	16	2.88	4.32	2.47	3.71	1.70	2.56	1.41	2.12
	17	2.71	4.07	2.32	3.49	1.60	2.41	1.33	1.99
	18	2.56	3.84	2.19	3.30	1.51	2.27	1.25	1.88
	19	2.42	3.64	2.08	3.13	1.43	2.15	1.19	1.78
	20	2.30	3.46	1.98	2.97	1.36	2.05	1.13	1.69
	21	2.19	3.29	1.88	2.83	1.30	1.95	1.07	1.61
	22	2.09	3.14	1.80	2.70	1.24	1.86	1.02	1.54
	23	2.00	3.01	1.72	2.58	1.18	1.78	0.979	1.47
	24	1.92	2.88	1.65	2.47	1.13	1.70	0.939	1.41
	25	1.84	2.77	1.58	2.38	1.09	1.64	0.901	1.35
	26	1.77	2.66	1.52	2.28	1.05	1.57	0.866	1.30
	27	1.70	2.56	1.46	2.20	1.01	1.52	0.834	1.25
	28	1.64	2.47	1.41	2.12	0.972	1.46	0.805	1.21
	29	1.59	2.38	1.36	2.05	0.938	1.41	0.777	1.17
	30	1.53	2.31	1.32	1.98	0.907	1.36	0.751	1.13
	32	1.44	2.16	1.23	1.86	0.850	1.28	0.704	1.06
	34	1.35	2.03	1.16	1.75	0.800	1.20	0.663	0.996
	36	1.28	1.92	1.10	1.65	0.756	1.14	0.626	0.940
	38	1.21	1.82	1.04	1.56	0.716	1.08	0.593	0.891
	40	1.15	1.73	0.988	1.48	0.680	1.02	0.563	0.846
	42	1.10	1.65	0.941	1.41	0.648	0.974	0.536	0.806
	44	1.05	1.57	0.898	1.35	0.619	0.930	0.512	0.769
	46	1.00	1.50	0.859	1.29	0.592	0.889	0.490	0.736
	48	0.959	1.44	0.823	1.24	0.567	0.852	0.469	0.705
	50	0.920	1.38	0.790	1.19	0.544	0.818	0.451	0.677
	52	0.885	1.33	0.760	1.14	0.523	0.787	0.433	0.651
Beam Properties									
W_c/Ω_b	$\phi_b W_c$, kip-ft	46.0	69.2	39.5	59.4	27.2	40.9	22.5	33.9
M_y/Ω_b	$\phi_b M_y$, kip-ft	4.86	7.31	4.32	6.49	2.83	4.25	2.44	3.66
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	5.75	8.65	4.94	7.42	3.40	5.11	2.82	4.23
BF_1/Ω_b	$\phi_b BF_1$, kips	0.327	0.492	0.324	0.487	0.145	0.219	0.163	0.244
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	0.853	1.28	0.836	1.26	0.452	0.679	0.454	0.682
V_n/Ω_v	$\phi_v V_{nx}$, kips	16.2	24.3	9.22	13.9	13.6	20.4	6.91	10.4
Z_x, in.^{3}		3.84		3.30		2.27		1.88	
L_p, ft		1.76		1.73		1.60		1.53	
L_y, ft		4.48		3.64		5.53		3.87	
L_r, ft		36.3		28.5		45.7		31.3	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-7 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-8
Maximum Total Uniform Load, kips
S-Shapes (Hot Rolled)

S6–S3

Shape		S6×		S5×		S4×		S3×	
		12.5		10		7.7		5.7	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	36.0	54.1	27.7	41.6	19.0	28.5	11.5	17.4
	3	33.7	50.7	22.4	33.7	13.9	20.8	7.70	11.6
	4	25.3	38.0	16.8	25.3	10.4	15.6	5.77	8.68
	5	20.2	30.4	13.4	20.2	8.32	12.5	4.62	6.94
	6	16.9	25.4	11.2	16.8	6.93	10.4	3.85	5.79
	7	14.5	21.7	9.60	14.4	5.94	8.93	3.30	4.96
	8	12.6	19.0	8.40	12.6	5.20	7.82	2.89	4.34
	9	11.2	16.9	7.47	11.2	4.62	6.95	2.57	3.86
	10	10.1	15.2	6.72	10.1	4.16	6.25	2.31	3.47
	11	9.20	13.8	6.11	9.18	3.78	5.68	2.10	3.16
	12	8.43	12.7	5.60	8.42	3.47	5.21	1.92	2.89
	13	7.78	11.7	5.17	7.77	3.20	4.81	1.78	2.67
	14	7.23	10.9	4.80	7.22	2.97	4.47	1.65	2.48
	15	6.75	10.1	4.48	6.74	2.77	4.17	1.54	2.31
	16	6.32	9.51	4.20	6.31	2.60	3.91	1.44	2.17
	17	5.95	8.95	3.95	5.94	2.45	3.68	1.36	2.04
	18	5.62	8.45	3.73	5.61	2.31	3.47	1.28	1.93
	19	5.33	8.01	3.54	5.32	2.19	3.29	1.22	1.83
	20	5.06	7.61	3.36	5.05	2.08	3.13	1.15	1.74
	21	4.82	7.24	3.20	4.81	1.98	2.98	1.10	1.65
	22	4.60	6.91	3.06	4.59	1.89	2.84	1.05	1.58
	23	4.40	6.61	2.92	4.39	1.81	2.72	1.00	1.51
	24	4.22	6.34	2.80	4.21	1.73	2.61	0.962	1.45
	25	4.05	6.08	2.69	4.04	1.66	2.50	0.924	1.39
	26	3.89	5.85	2.59	3.89	1.60	2.41	0.888	1.34
	27	3.75	5.63	2.49	3.74	1.54	2.32	0.855	1.29
	28	3.61	5.43	2.40	3.61	1.49	2.23	0.825	1.24
	29	3.49	5.24	2.32	3.48	1.43	2.16	0.796	1.20
	30	3.37	5.07	2.24	3.37	1.39	2.08	0.770	1.16
	32	3.16	4.75	2.10	3.16	1.30	1.95	0.722	1.08
	34	2.98	4.47	1.98	2.97	1.22	1.84	0.679	1.02
	36	2.81	4.23	1.87	2.81	1.16	1.74	0.642	0.964
	38	2.66	4.00	1.77	2.66	1.09	1.65	0.608	0.914
	40	2.53	3.80	1.68	2.53	1.04	1.56	0.577	0.868
	42	2.41	3.62	1.60	2.41	0.991	1.49	0.550	0.827
	44	2.30	3.46	1.53	2.30	0.946	1.42	0.525	0.789
	46	2.20	3.31	1.46	2.20	0.904	1.36	0.502	0.755
	48	2.11	3.17	1.40	2.10	0.867	1.30	0.481	0.723
	50	2.02	3.04	1.34	2.02	0.832	1.25	0.462	0.694
	52	1.95	2.93	1.29	1.94	0.800	1.20	0.444	0.668
Beam Properties									
W_c/Ω_b	$\phi_b W_c$, kip-ft	101	152	67.2	101	41.6	62.5	23.1	34.7
M_y/Ω_b	$\phi_b M_y$, kip-ft	11.0	16.5	7.33	11.0	4.51	6.77	2.49	3.74
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	12.6	19.0	8.40	12.6	5.20	7.82	2.89	4.34
BF_1/Ω_b	$\phi_b BF_1$, kips	0.797	1.20	0.496	0.746	0.290	0.436	0.143	0.215
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	2.05	3.08	1.37	2.06	0.832	1.25	0.445	0.669
V_n/Ω_v	$\phi_v V_{nx}$, kips	18.0	27.1	13.8	20.8	9.49	14.3	6.27	9.42
Z_x, in.^{3}		8.45		5.61		3.47		1.93	
L_p, ft		1.90		1.73		1.55		1.39	
L_y, ft		3.99		3.89		3.94		4.19	
L_r, ft		31.2		31.0		31.9		34.4	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-8 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

S24–S20

Table 7-9
Maximum Total Uniform Load, kips
S-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		S24×										S20×	
		121		106		100		90		80		96	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	6					1000	1510					853	1280
	7	1010	1520			955	1430					748	1120
	8	921	1380	771	1160	835	1260	764	1150			654	984
	9	819	1230	761	1140	742	1120	691	1040			582	874
	10	737	1110	685	1030	668	1000	622	934	542	815	524	787
	11	670	1010	623	936	607	913	565	850	523	785	476	715
	12	614	923	571	858	557	837	518	779	479	720	436	656
	13	567	852	527	792	514	773	478	719	442	665	403	605
	14	527	791	489	736	477	717	444	667	411	617	374	562
	15	491	739	457	687	445	670	415	623	383	576	349	525
	16	461	692	428	644	418	628	389	584	359	540	327	492
	17	434	652	403	606	393	591	366	550	338	508	308	463
	18	410	616	381	572	371	558	345	519	319	480	291	437
	19	388	583	361	542	352	529	327	492	303	455	276	414
	20	369	554	343	515	334	502	311	467	287	432	262	393
	21	351	528	326	490	318	478	296	445	274	411	249	375
	22	335	504	311	468	304	456	283	425	261	393	238	358
	23	321	482	298	448	291	437	270	406	250	376	228	342
	24	307	462	285	429	278	418	259	389	239	360	218	328
	25	295	443	274	412	267	402	249	374	230	346	209	315
	26	284	426	264	396	257	386	239	359	221	332	201	303
	27	273	410	254	381	247	372	230	346	213	320	194	291
	28	263	396	245	368	239	359	222	334	205	309	187	281
	29	254	382	236	355	230	346	214	322	198	298	181	271
	30	246	369	228	343	223	335	207	311	192	288	175	262
	32	230	346	214	322	209	314	194	292	180	270	164	246
	34	217	326	202	303	197	295	183	275	169	254	154	231
	36	205	308	190	286	186	279	173	260	160	240	145	219
	38	194	292	180	271	176	264	164	246	151	227	138	207
	40	184	277	171	257	167	251	155	234	144	216	131	197
	42	176	264	163	245	159	239	148	222	137	206	125	187
	44	168	252	156	234	152	228	141	212	131	196	119	179
	46	160	241	149	224	145	218	135	203	125	188	114	171
	48	154	231	143	215	139	209	130	195	120	180	109	164
	50	147	222	137	206	134	201	124	187	115	173	105	157
	52	142	213	132	198	128	193	120	180	111	166	101	151
	54	137	205	127	191	124	186	115	173	106	160	96.9	146
	56	132	198	122	184	119	179	111	167	103	154	93.5	141
	58	127	191	118	178	115	173	107	161	99.1	149	90.3	136
	60	123	185	114	172	111	167	104	156	95.8	144	87.3	131
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	7370	11100	6850	10300	6680	10000	6220	9340	5750	8640	5240	7870
M_y/Ω_b	$\phi_b M_y$, kip-ft	777	1170	733	1100	699	1050	660	992	621	933	551	829
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	921	1380	856	1290	835	1260	777	1170	718	1080	654	984
BF_1/Ω_b	$\phi_b BF_1$, kips	75.0	113	67.8	102	78.3	118	70.5	106	60.7	91.3	50.8	76.3
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	160	240	154	232	149	224	144	216	137	206	111	167
V_n/Ω_v	$\phi_v V_{nx}$, kips	506	760	386	580	501	753	382	574	271	408	427	641
Z_x, in.^{3}		284		264		258		240		222		202	
L_p, ft		4.02		3.99		3.59		3.59		3.60		3.66	
L_y, ft		5.94		5.82		5.33		5.25		5.21		5.69	
L_r, ft		27.3		26.1		24.8		23.7		23.0		28.3	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

Note 1: Beams must be laterally supported if Table 7-9 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-9 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

S20–S15

Shape		S20×						S18×				S15×	
		86		75		66		70		54.7		50	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	4							757	1140			420	631
	5			693	1040			685	1030	397	596	336	505
	6	707	1060	630	947	497	746	570	857	347	522	280	421
	7	699	1050	540	812	494	742	489	735	298	447	240	361
	8	612	919	473	710	432	649	428	643	260	391	210	316
	9	544	817	420	632	384	577	380	572	231	348	187	281
	10	489	735	378	568	346	519	342	514	208	313	168	253
	11	445	669	344	517	314	472	311	468	189	285	153	230
	12	408	613	315	474	288	433	285	429	174	261	140	210
	13	376	566	291	437	266	399	263	396	160	241	129	194
	14	350	525	270	406	247	371	244	367	149	224	120	180
	15	326	490	252	379	230	346	228	343	139	209	112	168
	16	306	460	236	355	216	325	214	322	130	196	105	158
	17	288	433	222	334	203	305	201	303	123	184	98.8	149
	18	272	409	210	316	192	289	190	286	116	174	93.4	140
	19	258	387	199	299	182	273	180	271	110	165	88.4	133
	20	245	368	189	284	173	260	171	257	104	157	84.0	126
	21	233	350	180	271	165	247	163	245	99.2	149	80.0	120
	22	222	334	172	258	157	236	156	234	94.7	142	76.4	115
	23	213	320	164	247	150	226	149	224	90.6	136	73.1	110
	24	204	306	158	237	144	216	143	214	86.8	130	70.0	105
	25	196	294	151	227	138	208	137	206	83.3	125	67.2	101
	26	188	283	145	219	133	200	132	198	80.1	120	64.6	97.1
	27	181	272	140	211	128	192	127	191	77.2	116	62.2	93.5
	28	175	263	135	203	123	185	122	184	74.4	112	60.0	90.2
	29	169	254	130	196	119	179	118	177	71.8	108	57.9	87.1
	30	163	245	126	189	115	173	114	171	69.4	104	56.0	84.2
	32	153	230	118	178	108	162	107	161	65.1	97.8	52.5	78.9
	34	144	216	111	167	102	153	101	151	61.3	92.1	49.4	74.3
	36	136	204	105	158	96.0	144	95.1	143	57.9	87.0	46.7	70.2
	38	129	194	99.5	150	90.9	137	90.1	135	54.8	82.4	44.2	66.5
	40	122	184	94.5	142	86.4	130	85.6	129	52.1	78.3	42.0	63.1
	42	117	175	90.0	135	82.3	124	81.5	122	49.6	74.5	40.0	60.1
	44	111	167	85.9	129	78.5	118	77.8	117	47.3	71.2	38.2	57.4
	46	106	160	82.2	124	75.1	113	74.4	112	45.3	68.1	36.5	54.9
	48	102	153	78.8	118	72.0	108	71.3	107	43.4	65.2	35.0	52.6
	50	97.9	147	75.6	114	69.1	104	68.5	103	41.7	62.6	33.6	50.5
	52	94.1	141	72.7	109	66.4	99.9	65.8	98.9	40.1	60.2	32.3	48.6
	54	90.6	136	70.0	105	64.0	96.2	63.4	95.3	38.6	58.0	31.1	46.8
	56	87.4	131	67.5	101	61.7	92.7	61.1	91.9	37.2	55.9	30.0	45.1
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	4890	7350	3780	5680	3460	5190	3420	5140	2080	3130	1680	2530
M_y/Ω_b	$\phi_b M_y$, kip-ft	523	785	395	594	368	553	353	530	217	327	173	260
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	612	919	473	710	432	649	428	643	260	391	210	316
BF_1/Ω_b	$\phi_b BF_1$, kips	46.7	70.2	53.0	79.6	46.4	69.8	44.6	67.1	37.8	56.8	29.2	43.9
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	108	162	90.6	136	86.6	130	76.4	115	55.5	83.4	41.8	62.9
V_n/Ω_v	$\phi_v V_{nx}$, kips	353	531	346	521	248	373	378	569	198	298	235	354
Z_x, in.^{3}		189		146		133		132		80.3		64.8	
L_p, ft		3.64		3.13		3.13		3.04		2.83		2.64	
L_y, ft		5.55		4.59		4.51		4.72		3.97		3.92	
L_r, ft		26.8		20.9		19.8		23.5		16.4		18.1	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-9 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

S15–S10

Table 7-9 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

Shape		S15×		S12×								S10×	
		42.9		50		40.8		35		31.8		35	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2											350	527
	3			504	758			303	455			312	470
	4			393	591	303	455	298	447	227	342	234	352
	5	321	482	315	473	261	393	238	358	220	331	187	282
	6	298	447	262	394	218	327	198	298	183	276	156	235
	7	255	383	225	338	187	280	170	256	157	236	134	201
	8	223	335	197	296	163	245	149	224	137	207	117	176
	9	198	298	175	263	145	218	132	199	122	184	104	157
	10	179	268	157	236	131	196	119	179	110	165	93.7	141
	11	162	244	143	215	119	178	108	163	100	150	85.2	128
	12	149	224	131	197	109	164	99.2	149	91.7	138	78.1	117
	13	137	206	121	182	100	151	91.5	138	84.6	127	72.1	108
	14	128	192	112	169	93.3	140	85.0	128	78.6	118	66.9	101
	15	119	179	105	158	87.1	131	79.3	119	73.3	110	62.5	93.9
	16	112	168	98.3	148	81.6	123	74.4	112	68.7	103	58.6	88.0
	17	105	158	92.5	139	76.8	115	70.0	105	64.7	97.2	55.1	82.9
	18	99.2	149	87.4	131	72.5	109	66.1	99.4	61.1	91.8	52.1	78.3
	19	93.9	141	82.8	124	68.7	103	62.6	94.1	57.9	87.0	49.3	74.1
	20	89.3	134	78.7	118	65.3	98.1	59.5	89.4	55.0	82.7	46.9	70.4
	21	85.0	128	74.9	113	62.2	93.5	56.7	85.2	52.4	78.7	44.6	67.1
	22	81.1	122	71.5	107	59.4	89.2	54.1	81.3	50.0	75.1	42.6	64.0
	23	77.6	117	68.4	103	56.8	85.3	51.7	77.8	47.8	71.9	40.8	61.2
	24	74.4	112	65.5	98.5	54.4	81.8	49.6	74.5	45.8	68.9	39.1	58.7
	25	71.4	107	62.9	94.6	52.2	78.5	47.6	71.5	44.0	66.1	37.5	56.3
	26	68.7	103	60.5	90.9	50.2	75.5	45.8	68.8	42.3	63.6	36.0	54.2
	27	66.1	99.4	58.3	87.6	48.4	72.7	44.1	66.2	40.7	61.2	34.7	52.2
	28	63.8	95.8	56.2	84.4	46.6	70.1	42.5	63.9	39.3	59.0	33.5	50.3
	29	61.6	92.5	54.2	81.5	45.0	67.7	41.0	61.7	37.9	57.0	32.3	48.6
	30	59.5	89.4	52.4	78.8	43.5	65.4	39.7	59.6	36.7	55.1	31.2	47.0
	32	55.8	83.8	49.2	73.9	40.8	61.3	37.2	55.9	34.4	51.7	29.3	44.0
	34	52.5	78.9	46.3	69.5	38.4	57.7	35.0	52.6	32.4	48.6	27.6	41.4
	36	49.6	74.5	43.7	65.7	36.3	54.5	33.1	49.7	30.6	45.9	26.0	39.1
	38	47.0	70.6	41.4	62.2	34.4	51.6	31.3	47.1	28.9	43.5	24.7	37.1
	40	44.6	67.1	39.3	59.1	32.6	49.1	29.8	44.7	27.5	41.3	23.4	35.2
	42	42.5	63.9	37.5	56.3	31.1	46.7	28.3	42.6	26.2	39.4	22.3	33.5
	44	40.6	61.0	35.8	53.7	29.7	44.6	27.0	40.7	25.0	37.6	21.3	32.0
	46	38.8	58.3	34.2	51.4	28.4	42.7	25.9	38.9	23.9	35.9	20.4	30.6
	48	37.2	55.9	32.8	49.3	27.2	40.9	24.8	37.3	22.9	34.4	19.5	29.3
	50	35.7	53.7	31.5	47.3	26.1	39.3	23.8	35.8	22.0	33.1	18.7	28.2
	52	34.3	51.6	30.3	45.5	25.1	37.7	22.9	34.4	21.2	31.8	18.0	27.1
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1790	2680	1570	2360	1310	1960	1190	1790	1100	1650	937	1410
M_y/Ω_b	$\phi_b M_y$, kip-ft	192	289	162	243	140	211	127	191	119	180	97.0	146
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	223	335	197	296	163	245	149	224	137	207	117	176
BF_1/Ω_b	$\phi_b BF_1$, kips	23.6	35.5	16.1	24.1	14.8	22.3	15.7	23.6	13.8	20.7	10.6	16.0
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	46.0	69.2	32.2	48.5	31.3	47.0	29.6	44.5	28.6	43.0	20.3	30.6
V_n/Ω_v	$\phi_v V_{nx}$, kips	160	241	252	379	151	227	151	227	114	171	175	263
Z_x, in.^{3}		68.8		60.6		50.3		45.9		42.4		36.1	
L_p, ft		2.81		2.74		2.74		2.60		2.61		2.47	
L_y, ft		4.13		4.90		4.30		4.00		3.92		4.37	
L_r, ft		18.7		28.1		21.7		19.6		18.5		24.8	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-9 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-9 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

S10–S5

Shape		S10×		S8×				S6×				S5×	
		25.4		23		18.4		17.25		12.5		10	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2			202	303			133	199	74.0	111	61.7	92.7
	3			162	244	126	189	88.4	133	70.3	106	47.2	70.9
	4	175	264	122	183	104	157	66.3	99.6	52.7	79.3	35.4	53.2
	5	148	222	97.4	146	83.3	125	53.0	79.7	42.2	63.4	28.3	42.5
	6	123	185	81.2	122	69.4	104	44.2	66.4	35.2	52.8	23.6	35.4
	7	106	159	69.6	105	59.5	89.5	37.9	56.9	30.1	45.3	20.2	30.4
	8	92.4	139	60.9	91.5	52.1	78.3	33.1	49.8	26.4	39.6	17.7	26.6
	9	82.1	123	54.1	81.4	46.3	69.6	29.5	44.3	23.4	35.2	15.7	23.6
	10	73.9	111	48.7	73.2	41.7	62.6	26.5	39.9	21.1	31.7	14.2	21.3
	11	67.2	101	44.3	66.6	37.9	56.9	24.1	36.2	19.2	28.8	12.9	19.3
	12	61.6	92.5	40.6	61.0	34.7	52.2	22.1	33.2	17.6	26.4	11.8	17.7
	13	56.8	85.4	37.5	56.3	32.0	48.2	20.4	30.7	16.2	24.4	10.9	16.4
	14	52.8	79.3	34.8	52.3	29.8	44.7	18.9	28.5	15.1	22.6	10.1	15.2
	15	49.3	74.0	32.5	48.8	27.8	41.7	17.7	26.6	14.1	21.1	9.43	14.2
	16	46.2	69.4	30.5	45.8	26.0	39.1	16.6	24.9	13.2	19.8	8.84	13.3
	17	43.5	65.3	28.7	43.1	24.5	36.8	15.6	23.4	12.4	18.7	8.32	12.5
	18	41.0	61.7	27.1	40.7	23.1	34.8	14.7	22.1	11.7	17.6	7.86	11.8
	19	38.9	58.4	25.6	38.5	21.9	33.0	14.0	21.0	11.1	16.7	7.45	11.2
	20	36.9	55.5	24.4	36.6	20.8	31.3	13.3	19.9	10.5	15.9	7.08	10.6
	21	35.2	52.9	23.2	34.9	19.8	29.8	12.6	19.0	10.0	15.1	6.74	10.1
	22	33.6	50.5	22.1	33.3	18.9	28.5	12.1	18.1	9.59	14.4	6.43	9.67
	23	32.1	48.3	21.2	31.8	18.1	27.2	11.5	17.3	9.17	13.8	6.15	9.25
	24	30.8	46.3	20.3	30.5	17.4	26.1	11.0	16.6	8.79	13.2	5.90	8.86
	25	29.6	44.4	19.5	29.3	16.7	25.0	10.6	15.9	8.44	12.7	5.66	8.51
	26	28.4	42.7	18.7	28.2	16.0	24.1	10.2	15.3	8.11	12.2	5.44	8.18
	27	27.4	41.1	18.0	27.1	15.4	23.2	9.82	14.8	7.81	11.7	5.24	7.88
	28	26.4	39.7	17.4	26.2	14.9	22.4	9.47	14.2	7.53	11.3	5.05	7.60
	29	25.5	38.3	16.8	25.3	14.4	21.6	9.14	13.7	7.27	10.9	4.88	7.33
	30	24.6	37.0	16.2	24.4	13.9	20.9	8.84	13.3	7.03	10.6	4.72	7.09
	32	23.1	34.7	15.2	22.9	13.0	19.6	8.29	12.5	6.59	9.91	4.42	6.65
	34	21.7	32.7	14.3	21.5	12.3	18.4	7.80	11.7	6.20	9.33	4.16	6.26
	36	20.5	30.8	13.5	20.3	11.6	17.4	7.37	11.1	5.86	8.81	3.93	5.91
	38	19.4	29.2	12.8	19.3	11.0	16.5	6.98	10.5	5.55	8.34	3.72	5.60
	40	18.5	27.8	12.2	18.3	10.4	15.7	6.63	9.96	5.27	7.93	3.54	5.32
	42	17.6	26.4	11.6	17.4	9.92	14.9	6.31	9.49	5.02	7.55	3.37	5.06
	44	16.8	25.2	11.1	16.6	9.47	14.2	6.03	9.06	4.79	7.21	3.22	4.83
	46	16.1	24.1	10.6	15.9	9.06	13.6	5.76	8.66	4.59	6.89	3.08	4.62
	48	15.4	23.1	10.2	15.3	8.68	13.0	5.52	8.30	4.39	6.61	2.95	4.43
	50	14.8	22.2	9.74	14.6	8.33	12.5	5.30	7.97	4.22	6.34	2.83	4.25
	52	14.2	21.4	9.37	14.1	8.01	12.0	5.10	7.66	4.06	6.10	2.72	4.09
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	739	1110	487	732	417	626	265	399	211	317	142	213
M_y/Ω_b	$\phi_b M_y$, kip-ft	80.6	121	51.2	77.0	45.3	68.2	27.6	41.5	23.1	34.7	15.4	23.1
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	92.4	139	60.9	91.5	52.1	78.3	33.1	49.8	26.4	39.6	17.7	26.6
BF_1/Ω_b	$\phi_b BF_1$, kips	9.00	13.5	6.55	9.85	5.77	8.67	3.23	4.85	2.97	4.47	2.07	3.12
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	19.3	29.1	11.8	17.7	11.4	17.1	6.13	9.22	5.94	8.93	3.97	5.97
V_n/Ω_v	$\phi_v V_{nx}$, kips	87.7	132	101	152	62.8	94.3	75.7	114	37.0	55.6	30.8	46.3
Z_x, in.^{3}		28.5		18.8		16.1		10.2		8.13		5.45	
L_p, ft		2.46		2.12		2.11		1.83		1.79		1.62	
L_y, ft		3.77		3.60		3.28		3.54		2.89		2.72	
L_r, ft		18.3		19.7		16.3		21.2		15.1		14.9	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-9 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

S4–S3

Table 7-9 (continued)

Maximum Total Uniform Load, kips

S-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

Shape		S4×				S3×			
		9.5		7.7		7.5		5.7	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	49.9	74.9	39.9	60.0	29.5	44.3	24.4	36.7
	3	33.2	50.0	28.5	42.9	19.7	29.5	16.3	24.5
	4	24.9	37.5	21.4	32.2	14.7	22.2	12.2	18.3
	5	19.9	30.0	17.1	25.7	11.8	17.7	9.76	14.7
	6	16.6	25.0	14.3	21.4	9.83	14.8	8.13	12.2
	7	14.2	21.4	12.2	18.4	8.42	12.7	6.97	10.5
	8	12.5	18.7	10.7	16.1	7.37	11.1	6.10	9.17
	9	11.1	16.7	9.51	14.3	6.55	9.85	5.42	8.15
	10	9.97	15.0	8.56	12.9	5.90	8.86	4.88	7.34
	11	9.06	13.6	7.78	11.7	5.36	8.06	4.44	6.67
	12	8.31	12.5	7.13	10.7	4.91	7.39	4.07	6.11
	13	7.67	11.5	6.58	9.90	4.54	6.82	3.75	5.64
	14	7.12	10.7	6.11	9.19	4.21	6.33	3.49	5.24
	15	6.65	9.99	5.71	8.58	3.93	5.91	3.25	4.89
	16	6.23	9.37	5.35	8.04	3.69	5.54	3.05	4.58
	17	5.86	8.82	5.04	7.57	3.47	5.21	2.87	4.32
	18	5.54	8.33	4.76	7.15	3.28	4.92	2.71	4.08
	19	5.25	7.89	4.51	6.77	3.10	4.66	2.57	3.86
	20	4.99	7.49	4.28	6.43	2.95	4.43	2.44	3.67
	21	4.75	7.14	4.08	6.13	2.81	4.22	2.32	3.49
	22	4.53	6.81	3.89	5.85	2.68	4.03	2.22	3.33
	23	4.33	6.52	3.72	5.59	2.56	3.85	2.12	3.19
	24	4.15	6.24	3.57	5.36	2.46	3.69	2.03	3.06
	25	3.99	5.99	3.42	5.15	2.36	3.55	1.95	2.93
	26	3.83	5.76	3.29	4.95	2.27	3.41	1.88	2.82
	27	3.69	5.55	3.17	4.77	2.18	3.28	1.81	2.72
	28	3.56	5.35	3.06	4.60	2.11	3.17	1.74	2.62
	29	3.44	5.17	2.95	4.44	2.03	3.06	1.68	2.53
	30	3.32	5.00	2.85	4.29	1.97	2.95	1.63	2.45
	32	3.12	4.68	2.68	4.02	1.84	2.77	1.53	2.29
	34	2.93	4.41	2.52	3.78	1.73	2.61	1.44	2.16
	36	2.77	4.16	2.38	3.57	1.64	2.46	1.36	2.04
	38	2.62	3.94	2.25	3.39	1.55	2.33	1.28	1.93
	40	2.49	3.75	2.14	3.22	1.47	2.22	1.22	1.83
	42	2.37	3.57	2.04	3.06	1.40	2.11	1.16	1.75
	44	2.27	3.41	1.95	2.92	1.34	2.01	1.11	1.67
	46	2.17	3.26	1.86	2.80	1.28	1.93	1.06	1.59
	48	2.08	3.12	1.78	2.68	1.23	1.85	1.02	1.53
	50	1.99	3.00	1.71	2.57	1.18	1.77	0.976	1.47
	52	1.92	2.88	1.65	2.47	1.13	1.70	0.939	1.41
Beam Properties									
W_c/Ω_b	$\phi_b W_c$, kip-ft	99.7	150	85.6	129	59.0	88.6	48.8	73.4
M_y/Ω_b	$\phi_b M_y$, kip-ft	10.5	15.8	9.36	14.1	6.13	9.21	5.28	7.93
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	12.5	18.7	10.7	16.1	7.37	11.1	6.10	9.17
BF_1/Ω_b	$\phi_b BF_1$, kips	1.27	1.90	1.20	1.81	0.563	0.846	0.628	0.944
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	2.47	3.72	2.42	3.64	1.31	1.97	1.32	1.98
V_n/Ω_v	$\phi_v V_{nx}$, kips	35.0	52.7	20.0	30.0	29.4	44.2	15.0	22.5
Z_x, in.^{3}		3.84		3.30		2.27		1.88	
L_p, ft		1.49		1.46		1.35		1.29	
L_y, ft		3.01		2.58		3.55		2.60	
L_r, ft		18.3		14.6		23.0		15.8	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-9 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

C15–C12

Table 7-10
Maximum Total Uniform Load, kips
C-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		C15×						C12×					
		50		40		33.9		30		25		20.7	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	291	437					155	233	116	175		
	3	275	413	194	292	159	239	133	200	115	173	86.9	131
	4	206	310	165	249	149	225	99.9	150	86.5	130	76.0	114
	5	165	248	132	199	120	180	79.9	120	69.2	104	60.8	91.4
	6	137	207	110	166	99.7	150	66.6	100	57.6	86.6	50.6	76.1
	7	118	177	94.5	142	85.4	128	57.1	85.8	49.4	74.3	43.4	65.3
	8	103	155	82.7	124	74.7	112	49.9	75.0	43.2	65.0	38.0	57.1
	9	91.6	138	73.5	111	66.4	99.9	44.4	66.7	38.4	57.8	33.8	50.8
	10	82.5	124	66.2	99.5	59.8	89.9	39.9	60.0	34.6	52.0	30.4	45.7
	11	75.0	113	60.2	90.4	54.4	81.7	36.3	54.6	31.4	47.3	27.6	41.5
	12	68.7	103	55.1	82.9	49.8	74.9	33.3	50.0	28.8	43.3	25.3	38.1
	13	63.4	95.4	50.9	76.5	46.0	69.1	30.7	46.2	26.6	40.0	23.4	35.1
	14	58.9	88.5	47.3	71.0	42.7	64.2	28.5	42.9	24.7	37.1	21.7	32.6
	15	55.0	82.6	44.1	66.3	39.9	59.9	26.6	40.0	23.1	34.7	20.3	30.5
	16	51.6	77.5	41.4	62.2	37.4	56.2	25.0	37.5	21.6	32.5	19.0	28.5
	17	48.5	72.9	38.9	58.5	35.2	52.9	23.5	35.3	20.3	30.6	17.9	26.9
	18	45.8	68.9	36.8	55.3	33.2	49.9	22.2	33.4	19.2	28.9	16.9	25.4
	19	43.4	65.2	34.8	52.3	31.5	47.3	21.0	31.6	18.2	27.4	16.0	24.0
	20	41.2	62.0	33.1	49.7	29.9	44.9	20.0	30.0	17.3	26.0	15.2	22.8
	21	39.3	59.0	31.5	47.4	28.5	42.8	19.0	28.6	16.5	24.8	14.5	21.8
	22	37.5	56.3	30.1	45.2	27.2	40.8	18.2	27.3	15.7	23.6	13.8	20.8
	23	35.9	53.9	28.8	43.2	26.0	39.1	17.4	26.1	15.0	22.6	13.2	19.9
	24	34.4	51.7	27.6	41.4	24.9	37.4	16.6	25.0	14.4	21.7	12.7	19.0
	25	33.0	49.6	26.5	39.8	23.9	35.9	16.0	24.0	13.8	20.8	12.2	18.3
	26	31.7	47.7	25.5	38.3	23.0	34.6	15.4	23.1	13.3	20.0	11.7	17.6
	27	30.5	45.9	24.5	36.8	22.1	33.3	14.8	22.2	12.8	19.3	11.3	16.9
	28	29.5	44.3	23.6	35.5	21.4	32.1	14.3	21.4	12.4	18.6	10.9	16.3
	29	28.4	42.7	22.8	34.3	20.6	31.0	13.8	20.7	11.9	17.9	10.5	15.8
	30	27.5	41.3	22.1	33.2	19.9	30.0	13.3	20.0	11.5	17.3	10.1	15.2
	31	26.6	40.0	21.3	32.1	19.3	29.0	12.9	19.4	11.2	16.8	9.80	14.7
	32	25.8	38.7	20.7	31.1	18.7	28.1	12.5	18.8	10.8	16.2	9.50	14.3
	33	25.0	37.6	20.1	30.1	18.1	27.2	12.1	18.2	10.5	15.8	9.21	13.8
	34	24.3	36.5	19.5	29.3	17.6	26.4	11.7	17.7	10.2	15.3	8.94	13.4
	35	23.6	35.4	18.9	28.4	17.1	25.7	11.4	17.2	9.88	14.9	8.68	13.1
	36	22.9	34.4	18.4	27.6	16.6	25.0	11.1	16.7	9.61	14.4	8.44	12.7
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	825	1240	662	995	598	899	399	600	346	520	304	457
M_y/Ω_b	$\phi_b M_y$, kip-ft	80.4	121	67.0	101	61.6	92.6	40.0	60.1	35.6	53.4	32.0	48.1
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	103	155	82.7	124	74.7	112	49.9	75.0	43.2	65.0	38.0	57.1
BF_1/Ω_b	$\phi_b BF_1$, kips	7.67	11.5	8.32	12.5	8.08	12.1	4.84	7.28	4.88	7.34	4.47	6.71
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	13.0	19.6	12.3	18.5	11.9	17.8	7.27	10.9	7.00	10.5	6.65	9.99
V_n/Ω_v	$\phi_v V_{nx}$, kips	146	219	97.0	146	79.5	120	77.6	117	58.2	87.5	43.5	65.3
Z_x, in.^{3}		68.9		55.3		49.9		33.4		28.9		25.4	
L_p, ft		2.78		2.77		2.72		2.46		2.44		2.38	
L_y, ft		5.74		4.66		4.35		4.51		4.01		3.72	
L_r, ft		44.7		32.9		29.5		33.6		27.9		24.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-10 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-10 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Welded)

C10–C9

Shape		C10×								C9×			
		30		25		20		15.3		20		15	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	155	234	129	194	97.0	146			101	152	65.2	98.0
	3	104	156	90.9	137	78.0	117	64.7	97.2	67.3	101	53.7	80.7
	4	77.7	117	68.2	102	58.5	87.9	48.9	73.6	50.5	75.9	40.3	60.5
	5	62.2	93.5	54.5	82.0	46.8	70.3	39.2	58.9	40.4	60.7	32.2	48.4
	6	51.8	77.9	45.5	68.3	39.0	58.6	32.6	49.0	33.7	50.6	26.9	40.4
	7	44.4	66.8	39.0	58.6	33.4	50.2	28.0	42.0	28.8	43.4	23.0	34.6
	8	38.9	58.4	34.1	51.2	29.2	44.0	24.5	36.8	25.2	37.9	20.1	30.3
	9	34.5	51.9	30.3	45.5	26.0	39.1	21.8	32.7	22.4	33.7	17.9	26.9
	10	31.1	46.7	27.3	41.0	23.4	35.2	19.6	29.4	20.2	30.3	16.1	24.2
	11	28.3	42.5	24.8	37.3	21.3	32.0	17.8	26.8	18.4	27.6	14.6	22.0
	12	25.9	38.9	22.7	34.2	19.5	29.3	16.3	24.5	16.8	25.3	13.4	20.2
	13	23.9	35.9	21.0	31.5	18.0	27.1	15.1	22.6	15.5	23.3	12.4	18.6
	14	22.2	33.4	19.5	29.3	16.7	25.1	14.0	21.0	14.4	21.7	11.5	17.3
	15	20.7	31.2	18.2	27.3	15.6	23.4	13.1	19.6	13.5	20.2	10.7	16.1
	16	19.4	29.2	17.0	25.6	14.6	22.0	12.2	18.4	12.6	19.0	10.1	15.1
	17	18.3	27.5	16.0	24.1	13.8	20.7	11.5	17.3	11.9	17.9	9.48	14.2
	18	17.3	26.0	15.2	22.8	13.0	19.5	10.9	16.3	11.2	16.9	8.95	13.5
	19	16.4	24.6	14.4	21.6	12.3	18.5	10.3	15.5	10.6	16.0	8.48	12.7
	20	15.5	23.4	13.6	20.5	11.7	17.6	9.79	14.7	10.1	15.2	8.06	12.1
	21	14.8	22.3	13.0	19.5	11.1	16.7	9.32	14.0	9.62	14.5	7.67	11.5
	22	14.1	21.2	12.4	18.6	10.6	16.0	8.90	13.4	9.18	13.8	7.32	11.0
	23	13.5	20.3	11.9	17.8	10.2	15.3	8.51	12.8	8.78	13.2	7.01	10.5
	24	13.0	19.5	11.4	17.1	9.75	14.7	8.16	12.3	8.41	12.6	6.71	10.1
	25	12.4	18.7	10.9	16.4	9.36	14.1	7.83	11.8	8.08	12.1	6.44	9.69
	26	12.0	18.0	10.5	15.8	9.00	13.5	7.53	11.3	7.77	11.7	6.20	9.31
	27	11.5	17.3	10.1	15.2	8.67	13.0	7.25	10.9	7.48	11.2	5.97	8.97
	28	11.1	16.7	9.74	14.6	8.36	12.6	6.99	10.5	7.21	10.8	5.75	8.65
	29	10.7	16.1	9.40	14.1	8.07	12.1	6.75	10.1	6.96	10.5	5.56	8.35
	30	10.4	15.6	9.09	13.7	7.80	11.7	6.53	9.81	6.73	10.1	5.37	8.07
	31	10.0	15.1	8.80	13.2	7.55	11.3	6.32	9.49	6.51	9.79	5.20	7.81
	32	9.72	14.6	8.52	12.8	7.31	11.0	6.12	9.20	6.31	9.48	5.03	7.57
	33	9.42	14.2	8.26	12.4	7.09	10.7	5.93	8.92	6.12	9.20	4.88	7.34
	34	9.14	13.7	8.02	12.1	6.88	10.3	5.76	8.66	5.94	8.93	4.74	7.12
	35	8.88	13.4	7.79	11.7	6.69	10.0	5.59	8.41	5.77	8.67	4.60	6.92
	36	8.64	13.0	7.58	11.4	6.50	9.77	5.44	8.17	5.61	8.43	4.48	6.73
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	311	467	273	410	234	352	196	294	202	303	161	242
M_y/Ω_b	$\phi_b M_y$, kip-ft	30.4	45.7	27.2	40.8	23.9	35.9	20.7	31.1	20.2	30.3	16.8	25.2
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	38.9	58.4	34.1	51.2	29.2	44.0	24.5	36.8	25.2	37.9	20.1	30.3
BF_1/Ω_b	$\phi_b BF_1$, kips	2.64	3.96	2.97	4.46	3.18	4.79	2.93	4.40	2.36	3.55	2.44	3.67
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	4.93	7.41	4.82	7.25	4.66	7.01	4.38	6.59	3.70	5.57	3.51	5.28
V_n/Ω_v	$\phi_v V_{nx}$, kips	80.8	122	64.7	97.2	48.5	72.9	32.3	48.6	52.4	78.7	32.6	49.0
Z_x, in.^{3}		26.0		22.8		19.5		16.3		16.9		13.5	
L_p, ft		2.27		2.23		2.18		2.10		2.05		2.00	
L_y, ft		5.49		4.56		3.86		3.40		4.20		3.38	
L_r, ft		44.2		35.4		28.2		23.3		32.6		23.9	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-10 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

C9–C7

Table 7-10 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		C9×		C8×						C7×			
		13.4		18.75		13.75		11.5		14.75		12.25	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	58.2	87.5	82.7	124	64.7	97.2	45.5	68.4	56.4	84.8	49.1	73.8
	3	50.9	76.4	55.1	82.8	45.2	67.9	37.3	56.1	37.6	56.5	32.7	49.2
	4	38.1	57.3	41.3	62.1	33.9	50.9	28.0	42.1	28.2	42.4	24.6	36.9
	5	30.5	45.9	33.1	49.7	27.1	40.7	22.4	33.7	22.6	33.9	19.6	29.5
	6	25.4	38.2	27.6	41.4	22.6	33.9	18.7	28.1	18.8	28.3	16.4	24.6
	7	21.8	32.8	23.6	35.5	19.4	29.1	16.0	24.1	16.1	24.2	14.0	21.1
	8	19.1	28.7	20.7	31.1	16.9	25.5	14.0	21.0	14.1	21.2	12.3	18.5
	9	17.0	25.5	18.4	27.6	15.1	22.6	12.4	18.7	12.5	18.8	10.9	16.4
	10	15.3	22.9	16.5	24.8	13.6	20.4	11.2	16.8	11.3	17.0	9.82	14.8
	11	13.9	20.8	15.0	22.6	12.3	18.5	10.2	15.3	10.3	15.4	8.93	13.4
	12	12.7	19.1	13.8	20.7	11.3	17.0	9.33	14.0	9.40	14.1	8.19	12.3
	13	11.7	17.6	12.7	19.1	10.4	15.7	8.62	13.0	8.68	13.0	7.56	11.4
	14	10.9	16.4	11.8	17.7	9.68	14.5	8.00	12.0	8.06	12.1	7.02	10.5
	15	10.2	15.3	11.0	16.6	9.03	13.6	7.47	11.2	7.52	11.3	6.55	9.84
	16	9.54	14.3	10.3	15.5	8.47	12.7	7.00	10.5	7.05	10.6	6.14	9.23
	17	8.98	13.5	9.72	14.6	7.97	12.0	6.59	9.90	6.64	9.98	5.78	8.69
	18	8.48	12.7	9.18	13.8	7.53	11.3	6.22	9.35	6.27	9.42	5.46	8.20
	19	8.03	12.1	8.70	13.1	7.13	10.7	5.90	8.86	5.94	8.93	5.17	7.77
	20	7.63	11.5	8.27	12.4	6.78	10.2	5.60	8.42	5.64	8.48	4.91	7.38
	21	7.27	10.9	7.87	11.8	6.45	9.70	5.33	8.02	5.37	8.08	4.68	7.03
	22	6.94	10.4	7.51	11.3	6.16	9.26	5.09	7.65	5.13	7.71	4.47	6.71
	23	6.63	9.97	7.19	10.8	5.89	8.86	4.87	7.32	4.91	7.37	4.27	6.42
	24	6.36	9.56	6.89	10.4	5.65	8.49	4.67	7.01	4.70	7.07	4.09	6.15
	25	6.10	9.17	6.61	9.94	5.42	8.15	4.48	6.73	4.51	6.78	3.93	5.91
	26	5.87	8.82	6.36	9.56	5.21	7.83	4.31	6.48	4.34	6.52	3.78	5.68
	27	5.65	8.49	6.12	9.20	5.02	7.54	4.15	6.24	4.18	6.28	3.64	5.47
	28	5.45	8.19	5.90	8.87	4.84	7.27	4.00	6.01	4.03	6.06	3.51	5.27
	29	5.26	7.91	5.70	8.57	4.67	7.02	3.86	5.81	3.89	5.85	3.39	5.09
	30	5.09	7.64	5.51	8.28	4.52	6.79	3.73	5.61	3.76	5.65	3.27	4.92
	31	4.92	7.40	5.33	8.02	4.37	6.57	3.61	5.43	3.64	5.47	3.17	4.76
	32	4.77	7.17	5.17	7.77	4.23	6.37	3.50	5.26	3.53	5.30	3.07	4.61
	33	4.62	6.95	5.01	7.53	4.11	6.17	3.39	5.10	3.42	5.14	2.98	4.47
	34	4.49	6.74	4.86	7.31	3.99	5.99	3.29	4.95	3.32	4.99	2.89	4.34
	35	4.36	6.55	4.72	7.10	3.87	5.82	3.20	4.81	3.22	4.85	2.81	4.22
	36	4.24	6.37	4.59	6.90	3.76	5.66	3.11	4.68	3.13	4.71	2.73	4.10
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	153	229	165	248	136	204	112	168	113	170	98.2	148
M_y/Ω_b	$\phi_b M_y$, kip-ft	16.0	24.1	16.3	24.5	14.0	21.0	11.8	17.8	11.3	16.9	10.0	15.1
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	19.1	28.7	20.7	31.1	16.9	25.5	14.0	21.0	14.1	21.2	12.3	18.5
BF_1/Ω_b	$\phi_b BF_1$, kips	2.39	3.59	1.63	2.45	1.83	2.76	1.78	2.68	1.24	1.86	1.35	2.04
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	3.44	5.16	2.83	4.25	2.80	4.21	2.59	3.90	2.07	3.11	2.02	3.04
V_n/Ω_v	$\phi_v V_{nx}$, kips	29.1	43.7	51.7	77.8	32.3	48.6	22.8	34.2	37.1	55.8	28.3	42.5
Z_x, in.^{3}		12.7		13.8		11.3		9.35		9.42		8.20	
L_p, ft		1.96		1.92		1.87		1.83		1.78		1.74	
L_y, ft		3.24		4.62		3.49		3.04		4.07		3.39	
L_r, ft		22.5		37.1		26.2		21.3		32.5		25.9	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-10 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic
Stainless Steel

$F_y = 30$ ksi

Table 7-10 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Welded)

C7–C5

Shape		C7×		C6×						C5×			
		9.8		13		10.5		8.2		9		6.7	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	39.8	59.9	44.5	66.9	37.2	55.9	32.0	48.1	25.6	38.4	20.5	30.8
	3	28.1	42.3	29.7	44.6	24.8	37.3	21.3	32.1	17.0	25.6	13.7	20.5
	4	21.1	31.7	22.3	33.4	18.6	28.0	16.0	24.0	12.8	19.2	10.2	15.4
	5	16.9	25.4	17.8	26.8	14.9	22.4	12.8	19.2	10.2	15.4	8.20	12.3
	6	14.1	21.1	14.8	22.3	12.4	18.6	10.7	16.0	8.52	12.8	6.83	10.3
	7	12.1	18.1	12.7	19.1	10.6	16.0	9.14	13.7	7.30	11.0	5.85	8.80
	8	10.6	15.9	11.1	16.7	9.30	14.0	8.00	12.0	6.39	9.61	5.12	7.70
	9	9.38	14.1	9.89	14.9	8.27	12.4	7.11	10.7	5.68	8.54	4.55	6.84
	10	8.44	12.7	8.90	13.4	7.44	11.2	6.40	9.62	5.11	7.69	4.10	6.16
	11	7.67	11.5	8.09	12.2	6.76	10.2	5.82	8.74	4.65	6.99	3.73	5.60
	12	7.03	10.6	7.42	11.1	6.20	9.32	5.33	8.01	4.26	6.40	3.41	5.13
	13	6.49	9.76	6.85	10.3	5.72	8.60	4.92	7.40	3.93	5.91	3.15	4.74
	14	6.03	9.06	6.36	9.55	5.31	7.99	4.57	6.87	3.65	5.49	2.93	4.40
	15	5.63	8.46	5.93	8.92	4.96	7.45	4.26	6.41	3.41	5.12	2.73	4.11
	16	5.28	7.93	5.56	8.36	4.65	6.99	4.00	6.01	3.20	4.80	2.56	3.85
	17	4.96	7.46	5.24	7.87	4.38	6.58	3.76	5.66	3.01	4.52	2.41	3.62
	18	4.69	7.05	4.94	7.43	4.13	6.21	3.55	5.34	2.84	4.27	2.28	3.42
	19	4.44	6.68	4.68	7.04	3.92	5.89	3.37	5.06	2.69	4.05	2.16	3.24
	20	4.22	6.34	4.45	6.69	3.72	5.59	3.20	4.81	2.56	3.84	2.05	3.08
	21	4.02	6.04	4.24	6.37	3.54	5.32	3.05	4.58	2.43	3.66	1.95	2.93
	22	3.84	5.77	4.05	6.08	3.38	5.08	2.91	4.37	2.32	3.49	1.86	2.80
	23	3.67	5.52	3.87	5.82	3.23	4.86	2.78	4.18	2.22	3.34	1.78	2.68
	24	3.52	5.29	3.71	5.57	3.10	4.66	2.67	4.01	2.13	3.20	1.71	2.57
	25	3.38	5.07	3.56	5.35	2.98	4.47	2.56	3.85	2.05	3.07	1.64	2.46
	26	3.25	4.88	3.42	5.14	2.86	4.30	2.46	3.70	1.97	2.96	1.58	2.37
	27	3.13	4.70	3.30	4.95	2.76	4.14	2.37	3.56	1.89	2.85	1.52	2.28
	28	3.01	4.53	3.18	4.78	2.66	3.99	2.28	3.43	1.83	2.74	1.46	2.20
	29	2.91	4.37	3.07	4.61	2.57	3.86	2.21	3.32	1.76	2.65	1.41	2.12
	30	2.81	4.23	2.97	4.46	2.48	3.73	2.13	3.21	1.70	2.56	1.37	2.05
	31	2.72	4.09	2.87	4.32	2.40	3.61	2.06	3.10	1.65	2.48	1.32	1.99
	32	2.64	3.96	2.78	4.18	2.32	3.49	2.00	3.00	1.60	2.40	1.28	1.92
	33	2.56	3.84	2.70	4.05	2.25	3.39	1.94	2.91	1.55	2.33	1.24	1.87
	34	2.48	3.73	2.62	3.93	2.19	3.29	1.88	2.83	1.50	2.26	1.21	1.81
	35	2.41	3.62	2.54	3.82	2.13	3.19	1.83	2.75	1.46	2.20	1.17	1.76
	36	2.34	3.52	2.47	3.72	2.07	3.11	1.78	2.67	1.42	2.13	1.14	1.71
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	84.4	127	89.0	134	74.4	112	64.0	96.2	51.1	76.9	41.0	61.6
M_y/Ω_b	$\phi_b M_y$, kip-ft	8.89	13.4	8.81	13.2	7.60	11.4	6.72	10.1	5.20	7.82	4.35	6.54
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	10.6	15.9	11.1	16.7	9.30	14.0	8.00	12.0	6.39	9.61	5.12	7.70
BF_1/Ω_b	$\phi_b BF_1$, kips	1.32	1.99	0.764	1.15	0.880	1.32	0.883	1.33	0.539	0.811	0.544	0.818
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	1.94	2.92	1.51	2.27	1.48	2.23	1.42	2.14	0.987	1.48	0.940	1.41
V_n/Ω_v	$\phi_v V_{nx}$, kips	19.9	29.9	34.9	52.5	24.3	36.5	17.1	25.7	20.2	30.4	11.5	17.3
Z_x, in.^{3}		7.05		7.43		6.21		5.34		4.27		3.42	
L_p, ft		1.69		1.66		1.61		1.55		1.50		1.41	
L_y, ft		2.95		4.68		3.54		2.99		3.70		2.82	
L_r, ft		21.3		38.3		28.0		22.8		29.9		21.8	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-10 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

C4–C3

Table 7-10 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		C4×						C3×					
		7.25		6.25		5.4		6		5		4.1	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	16.3	24.5	14.7	22.1	13.0	19.6	10.4	15.7	9.07	13.6	8.02	12.1
	3	10.8	16.3	9.81	14.7	8.68	13.0	6.94	10.4	6.05	9.09	5.35	8.04
	4	8.14	12.2	7.36	11.1	6.51	9.78	5.21	7.83	4.53	6.82	4.01	6.03
	5	6.51	9.78	5.89	8.85	5.21	7.83	4.17	6.26	3.63	5.45	3.21	4.82
	6	5.42	8.15	4.91	7.37	4.34	6.52	3.47	5.22	3.02	4.54	2.67	4.02
	7	4.65	6.99	4.21	6.32	3.72	5.59	2.98	4.47	2.59	3.89	2.29	3.44
	8	4.07	6.11	3.68	5.53	3.25	4.89	2.60	3.91	2.27	3.41	2.01	3.01
	9	3.62	5.44	3.27	4.92	2.89	4.35	2.31	3.48	2.02	3.03	1.78	2.68
	10	3.25	4.89	2.94	4.42	2.60	3.91	2.08	3.13	1.81	2.73	1.60	2.41
	11	2.96	4.45	2.68	4.02	2.37	3.56	1.89	2.85	1.65	2.48	1.46	2.19
	12	2.71	4.08	2.45	3.69	2.17	3.26	1.74	2.61	1.51	2.27	1.34	2.01
	13	2.50	3.76	2.26	3.40	2.00	3.01	1.60	2.41	1.40	2.10	1.23	1.85
	14	2.32	3.49	2.10	3.16	1.86	2.80	1.49	2.24	1.30	1.95	1.15	1.72
	15	2.17	3.26	1.96	2.95	1.74	2.61	1.39	2.09	1.21	1.82	1.07	1.61
	16	2.03	3.06	1.84	2.77	1.63	2.45	1.30	1.96	1.13	1.70	1.00	1.51
	17	1.91	2.88	1.73	2.60	1.53	2.30	1.23	1.84	1.07	1.60	0.944	1.42
	18	1.81	2.72	1.64	2.46	1.45	2.17	1.16	1.74	1.01	1.51	0.891	1.34
	19	1.71	2.57	1.55	2.33	1.37	2.06	1.10	1.65	0.955	1.43	0.844	1.27
	20	1.63	2.45	1.47	2.21	1.30	1.96	1.04	1.57	0.907	1.36	0.802	1.21
	21	1.55	2.33	1.40	2.11	1.24	1.86	0.992	1.49	0.864	1.30	0.764	1.15
	22	1.48	2.22	1.34	2.01	1.18	1.78	0.947	1.42	0.824	1.24	0.729	1.10
	23	1.42	2.13	1.28	1.92	1.13	1.70	0.906	1.36	0.789	1.19	0.698	1.05
	24	1.36	2.04	1.23	1.84	1.08	1.63	0.868	1.30	0.756	1.14	0.669	1.00
	25	1.30	1.96	1.18	1.77	1.04	1.57	0.833	1.25	0.726	1.09	0.642	0.965
	26	1.25	1.88	1.13	1.70	1.00	1.51	0.801	1.20	0.698	1.05	0.617	0.927
	27	1.21	1.81	1.09	1.64	0.964	1.45	0.772	1.16	0.672	1.01	0.594	0.893
	28	1.16	1.75	1.05	1.58	0.930	1.40	0.744	1.12	0.648	0.974	0.573	0.861
	29	1.12	1.69	1.02	1.53	0.898	1.35	0.718	1.08	0.625	0.940	0.553	0.832
	30	1.08	1.63	0.981	1.47	0.868	1.30	0.694	1.04	0.605	0.909	0.535	0.804
	31	1.05	1.58	0.950	1.43	0.840	1.26	0.672	1.01	0.585	0.879	0.518	0.778
	32	1.02	1.53	0.920	1.38	0.814	1.22	0.651	0.978	0.567	0.852	0.501	0.754
	33	0.986	1.48	0.892	1.34	0.789	1.19	0.631	0.949	0.550	0.826	0.486	0.731
	34	0.957	1.44	0.866	1.30	0.766	1.15	0.613	0.921	0.533	0.802	0.472	0.709
	35	0.930	1.40	0.841	1.26	0.744	1.12	0.595	0.895	0.518	0.779	0.458	0.689
	36	0.904	1.36	0.818	1.23	0.723	1.09	0.579	0.870	0.504	0.757	0.446	0.670
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	32.5	48.9	29.4	44.2	26.0	39.1	20.8	31.3	18.1	27.3	16.0	24.1
M_y/Ω_b	$\phi_b M_y$, kip-ft	3.29	4.95	3.03	4.56	2.75	4.13	2.08	3.13	1.86	2.79	1.68	2.52
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	4.07	6.11	3.68	5.53	3.25	4.89	2.60	3.91	2.27	3.41	2.01	3.01
BF_1/Ω_b	$\phi_b BF_1$, kips	0.295	0.443	0.317	0.476	0.318	0.478	0.128	0.193	0.144	0.216	0.147	0.221
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	0.602	0.905	0.596	0.896	0.582	0.875	0.337	0.507	0.337	0.506	0.329	0.494
V_n/Ω_v	$\phi_v V_{nx}$, kips	16.2	24.3	12.9	19.4	9.22	13.9	13.6	20.4	9.70	14.6	6.91	10.4
Z_x, in.^{3}		2.72		2.46		2.17		1.74		1.51		1.34	
L_p, ft		1.36		1.32		1.27		1.25		1.20		1.13	
L_y, ft		3.98		3.36		2.86		5.32		4.04		3.35	
L_r, ft		32.7		27.3		22.7		44.2		33.4		27.5	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-10 is used.

C8–C4

Table 7-11
Maximum Total Uniform Load, kips
C-Shapes (Hot Rolled)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		C8×		C6×				C5×				C4×	
		18.75		10.5		8.2		9		6.7		7.25	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	83.2	125	37.0	55.6	29.5	44.3	26.3	39.5	21.0	31.6	17.0	25.6
	3	55.5	83.4	24.7	37.1	20.3	30.6	17.5	26.3	14.0	21.1	11.3	17.0
	4	41.6	62.6	18.5	27.8	15.3	22.9	13.1	19.8	10.5	15.8	8.50	12.8
	5	33.3	50.0	14.8	22.2	12.2	18.3	10.5	15.8	8.41	12.6	6.80	10.2
	6	27.7	41.7	12.3	18.5	10.2	15.3	8.76	13.2	7.00	10.5	5.67	8.52
	7	23.8	35.7	10.6	15.9	8.72	13.1	7.51	11.3	6.00	9.02	4.86	7.30
	8	20.8	31.3	9.25	13.9	7.63	11.5	6.57	9.88	5.25	7.90	4.25	6.39
	9	18.5	27.8	8.22	12.4	6.78	10.2	5.84	8.78	4.67	7.02	3.78	5.68
	10	16.6	25.0	7.40	11.1	6.10	9.17	5.26	7.90	4.20	6.32	3.40	5.11
	11	15.1	22.7	6.73	10.1	5.55	8.34	4.78	7.18	3.82	5.74	3.09	4.65
	12	13.9	20.9	6.17	9.27	5.09	7.64	4.38	6.59	3.50	5.26	2.83	4.26
	13	12.8	19.2	5.69	8.56	4.69	7.06	4.04	6.08	3.23	4.86	2.62	3.93
	14	11.9	17.9	5.29	7.95	4.36	6.55	3.76	5.64	3.00	4.51	2.43	3.65
	15	11.1	16.7	4.93	7.42	4.07	6.11	3.50	5.27	2.80	4.21	2.27	3.41
	16	10.4	15.6	4.63	6.95	3.81	5.73	3.29	4.94	2.63	3.95	2.13	3.20
	17	9.79	14.7	4.35	6.54	3.59	5.40	3.09	4.65	2.47	3.72	2.00	3.01
	18	9.25	13.9	4.11	6.18	3.39	5.10	2.92	4.39	2.33	3.51	1.89	2.84
	19	8.76	13.2	3.90	5.85	3.21	4.83	2.77	4.16	2.21	3.32	1.79	2.69
	20	8.32	12.5	3.70	5.56	3.05	4.59	2.63	3.95	2.10	3.16	1.70	2.56
	21	7.93	11.9	3.52	5.30	2.91	4.37	2.50	3.76	2.00	3.01	1.62	2.43
	22	7.57	11.4	3.36	5.06	2.77	4.17	2.39	3.59	1.91	2.87	1.55	2.32
	23	7.24	10.9	3.22	4.84	2.65	3.99	2.29	3.44	1.83	2.75	1.48	2.22
	24	6.94	10.4	3.08	4.64	2.54	3.82	2.19	3.29	1.75	2.63	1.42	2.13
	25	6.66	10.0	2.96	4.45	2.44	3.67	2.10	3.16	1.68	2.53	1.36	2.04
	26	6.40	9.62	2.85	4.28	2.35	3.53	2.02	3.04	1.62	2.43	1.31	1.97
	27	6.17	9.27	2.74	4.12	2.26	3.40	1.95	2.93	1.56	2.34	1.26	1.89
	28	5.95	8.94	2.64	3.97	2.18	3.28	1.88	2.82	1.50	2.26	1.21	1.83
	29	5.74	8.63	2.55	3.84	2.10	3.16	1.81	2.72	1.45	2.18	1.17	1.76
	30	5.55	8.34	2.47	3.71	2.03	3.06	1.75	2.63	1.40	2.11	1.13	1.70
	31	5.37	8.07	2.39	3.59	1.97	2.96	1.70	2.55	1.36	2.04	1.10	1.65
	32	5.20	7.82	2.31	3.48	1.91	2.87	1.64	2.47	1.31	1.97	1.06	1.60
	33	5.04	7.58	2.24	3.37	1.85	2.78	1.59	2.39	1.27	1.91	1.03	1.55
	34	4.90	7.36	2.18	3.27	1.79	2.70	1.55	2.32	1.24	1.86	1.00	1.50
	35	4.76	7.15	2.11	3.18	1.74	2.62	1.50	2.26	1.20	1.80	0.972	1.46
	36	4.62	6.95	2.06	3.09	1.70	2.55	1.46	2.20	1.17	1.75	0.945	1.42
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	166	250	74.0	111	61.0	91.7	52.6	79.0	42.0	63.2	34.0	51.1
M_y/Ω_b	$\phi_b M_y$, kip-ft	16.5	24.8	7.54	11.3	6.48	9.74	5.33	8.01	4.45	6.68	3.43	5.15
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	20.8	31.3	9.25	13.9	7.63	11.5	6.57	9.88	5.25	7.90	4.25	6.39
BF_1/Ω_b	$\phi_b BF_1$, kips	1.72	2.58	0.889	1.34	0.854	1.28	0.533	0.802	0.544	0.817	0.293	0.440
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	2.93	4.41	1.48	2.23	1.41	2.12	1.00	1.51	0.952	1.43	0.618	0.929
V_n/Ω_v	$\phi_v V_{nx}$, kips	50.4	75.7	24.4	36.6	14.7	22.2	21.0	31.6	11.7	17.5	16.6	25.0
Z_x, in.^{3}		13.9		6.18		5.10		4.39		3.51		2.84	
L_p, ft		1.83		1.53		1.47		1.41		1.34		1.29	
L_y, ft		4.36		3.45		2.81		3.74		2.83		4.10	
L_r, ft		35.0		27.4		21.3		30.4		22.1		33.8	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-11 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-11 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Hot Rolled)

C4–C3

Shape		C4×		C3×	
		5.4		4.1	
Design		ASD	LRFD	ASD	LRFD
Span, ft	2	13.6	20.4	7.84	11.8
	3	9.05	13.6	5.23	7.85
	4	6.79	10.2	3.92	5.89
	5	5.43	8.16	3.14	4.71
	6	4.52	6.80	2.61	3.93
	7	3.88	5.83	2.24	3.37
	8	3.39	5.10	1.96	2.95
	9	3.02	4.53	1.74	2.62
	10	2.71	4.08	1.57	2.36
	11	2.47	3.71	1.43	2.14
	12	2.26	3.40	1.31	1.96
	13	2.09	3.14	1.21	1.81
	14	1.94	2.91	1.12	1.68
	15	1.81	2.72	1.05	1.57
	16	1.70	2.55	0.980	1.47
	17	1.60	2.40	0.922	1.39
	18	1.51	2.27	0.871	1.31
	19	1.43	2.15	0.825	1.24
	20	1.36	2.04	0.784	1.18
	21	1.29	1.94	0.747	1.12
	22	1.23	1.85	0.713	1.07
	23	1.18	1.77	0.682	1.02
	24	1.13	1.70	0.653	0.982
	25	1.09	1.63	0.627	0.943
	26	1.04	1.57	0.603	0.906
	27	1.01	1.51	0.581	0.873
	28	0.969	1.46	0.560	0.842
	29	0.936	1.41	0.541	0.813
	30	0.905	1.36	0.523	0.785
	31	0.875	1.32	0.506	0.760
	32	0.848	1.27	0.490	0.736
	33	0.822	1.24	0.475	0.714
	34	0.798	1.20	0.461	0.693
	35	0.775	1.17	0.448	0.673
	36	0.754	1.13	0.435	0.655
Beam Properties					
W_c/Ω_b	$\phi_b W_c$, kip-ft	27.1	40.8	15.7	23.6
M_y/Ω_b	$\phi_b M_y$, kip-ft	2.86	4.30	1.64	2.46
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	3.39	5.10	1.96	2.95
BF_1/Ω_b	$\phi_b BF_1$, kips	0.304	0.457	0.148	0.222
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	0.595	0.894	0.325	0.488
V_n/Ω_v	$\phi_v V_{nx}$, kips	9.04	13.6	6.27	9.42
Z_x, in.^{3}		2.27		1.31	
L_p, ft		1.21		1.07	
L_y, ft		2.95		3.25	
L_r, ft		23.8		26.7	
ASD		LRFD			
$\Omega_b = 1.67$		$\phi_b = 0.90$			
$\Omega_v = 1.67$		$\phi_v = 0.90$			

Note 1: Beams must be laterally supported if Table 7-11 is used.

C15–C12

Table 7-12
Maximum Total Uniform Load, kips
C-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		C15×						C12×					
		50		40		33.9		30		25		20.7	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	631	948					336	505	250	376		
	3	596	895	420	632			288	434	250	375		
	4	447	671	358	539	321	482	216	325	187	282	162	243
	5	357	537	287	431	259	389	173	260	150	225	132	198
	6	298	448	239	359	216	325	144	217	125	188	110	165
	7	255	384	205	308	185	278	124	186	107	161	94.1	141
	8	223	336	179	269	162	243	108	163	93.7	141	82.3	124
	9	199	298	159	239	144	216	96.2	145	83.3	125	73.2	110
	10	179	269	143	216	130	195	86.5	130	74.9	113	65.8	99.0
	11	162	244	130	196	118	177	78.7	118	68.1	102	59.9	90.0
	12	149	224	119	180	108	162	72.1	108	62.5	93.9	54.9	82.5
	13	137	207	110	166	99.7	150	66.6	100	57.6	86.6	50.6	76.1
	14	128	192	102	154	92.5	139	61.8	92.9	53.5	80.5	47.0	70.7
	15	119	179	95.6	144	86.4	130	57.7	86.7	50.0	75.1	43.9	66.0
	16	112	168	89.6	135	81.0	122	54.1	81.3	46.8	70.4	41.2	61.9
	17	105	158	84.3	127	76.2	115	50.9	76.5	44.1	66.3	38.7	58.2
	18	99.3	149	79.7	120	72.0	108	48.1	72.3	41.6	62.6	36.6	55.0
	19	94.1	141	75.5	113	68.2	102	45.5	68.5	39.4	59.3	34.7	52.1
	20	89.4	134	71.7	108	64.8	97.4	43.3	65.0	37.5	56.3	32.9	49.5
	21	85.1	128	68.3	103	61.7	92.7	41.2	61.9	35.7	53.6	31.4	47.1
	22	81.2	122	65.2	98.0	58.9	88.5	39.3	59.1	34.1	51.2	29.9	45.0
	23	77.7	117	62.3	93.7	56.3	84.7	37.6	56.6	32.6	49.0	28.6	43.0
	24	74.5	112	59.7	89.8	54.0	81.1	36.1	54.2	31.2	46.9	27.4	41.2
	25	71.5	107	57.4	86.2	51.8	77.9	34.6	52.0	30.0	45.1	26.3	39.6
	26	68.7	103	55.1	82.9	49.8	74.9	33.3	50.0	28.8	43.3	25.3	38.1
	27	66.2	99.5	53.1	79.8	48.0	72.1	32.1	48.2	27.8	41.7	24.4	36.7
	28	63.8	95.9	51.2	77.0	46.3	69.5	30.9	46.5	26.8	40.2	23.5	35.3
	29	61.6	92.6	49.4	74.3	44.7	67.1	29.8	44.9	25.8	38.8	22.7	34.1
	30	59.6	89.5	47.8	71.8	43.2	64.9	28.8	43.4	25.0	37.5	21.9	33.0
	31	57.6	86.6	46.3	69.5	41.8	62.8	27.9	42.0	24.2	36.3	21.2	31.9
	32	55.8	83.9	44.8	67.3	40.5	60.8	27.0	40.6	23.4	35.2	20.6	30.9
	33	54.2	81.4	43.4	65.3	39.3	59.0	26.2	39.4	22.7	34.1	20.0	30.0
	34	52.6	79.0	42.2	63.4	38.1	57.3	25.5	38.3	22.0	33.1	19.4	29.1
	35	51.1	76.7	41.0	61.6	37.0	55.6	24.7	37.2	21.4	32.2	18.8	28.3
	36	49.6	74.6	39.8	59.9	36.0	54.1	24.0	36.1	20.8	31.3	18.3	27.5
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	1790	2690	1430	2160	1300	1950	865	1300	749	1130	658	990
M_y/Ω_b	$\phi_b M_y$, kip-ft	174	262	145	218	133	201	86.7	130	77.0	116	69.4	104
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	223	336	179	269	162	243	108	163	93.7	141	82.3	124
BF_1/Ω_b	$\phi_b BF_1$, kips	28.3	42.5	27.1	40.7	25.1	37.7	16.8	25.2	15.6	23.4	13.5	20.3
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	37.7	56.7	35.3	53.1	33.8	50.8	21.0	31.6	20.0	30.1	18.8	28.3
V_n/Ω_v	$\phi_v V_{nx}$, kips	315	474	210	316	160	241	168	253	125	188	80.8	121
Z_x, in.^{3}		68.9		55.3		49.9		33.4		28.9		25.4	
L_p, ft		2.35		2.34		2.30		2.08		2.06		2.01	
L_y, ft		4.09		3.60		3.43		3.36		3.13		2.97	
L_r, ft		22.9		17.6		16.1		17.6		15.0		13.6	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

Note 1: Beams must be laterally supported if Table 7-12 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-12 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Welded)

C10–C9

Shape		C10×								C9×			
		30		25		20		15.3		20		15	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	337	506	280	421	210	316			219	329	140	211
	3	225	337	197	296	169	254	125	188	146	219	116	175
	4	168	253	148	222	127	191	106	159	109	164	87.3	131
	5	135	202	118	178	101	152	84.8	128	87.5	132	69.8	105
	6	112	169	98.5	148	84.5	127	70.7	106	72.9	110	58.2	87.4
	7	96.2	145	84.4	127	72.4	109	60.6	91.1	62.5	93.9	49.9	75.0
	8	84.2	127	73.9	111	63.4	95.3	53.0	79.7	54.7	82.2	43.6	65.6
	9	74.8	112	65.7	98.7	56.3	84.7	47.1	70.8	48.6	73.1	38.8	58.3
	10	67.4	101	59.1	88.8	50.7	76.2	42.4	63.8	43.8	65.8	34.9	52.5
	11	61.2	92.0	53.7	80.7	46.1	69.3	38.6	58.0	39.8	59.8	31.7	47.7
	12	56.1	84.4	49.2	74.0	42.2	63.5	35.4	53.1	36.5	54.8	29.1	43.7
	13	51.8	77.9	45.5	68.3	39.0	58.6	32.6	49.0	33.7	50.6	26.9	40.4
	14	48.1	72.3	42.2	63.4	36.2	54.4	30.3	45.5	31.3	47.0	24.9	37.5
	15	44.9	67.5	39.4	59.2	33.8	50.8	28.3	42.5	29.2	43.8	23.3	35.0
	16	42.1	63.3	36.9	55.5	31.7	47.6	26.5	39.9	27.3	41.1	21.8	32.8
	17	39.6	59.6	34.8	52.2	29.8	44.8	25.0	37.5	25.7	38.7	20.5	30.9
	18	37.4	56.2	32.8	49.3	28.2	42.3	23.6	35.4	24.3	36.5	19.4	29.1
	19	35.5	53.3	31.1	46.7	26.7	40.1	22.3	33.6	23.0	34.6	18.4	27.6
	20	33.7	50.6	29.5	44.4	25.3	38.1	21.2	31.9	21.9	32.9	17.5	26.2
	21	32.1	48.2	28.1	42.3	24.1	36.3	20.2	30.4	20.8	31.3	16.6	25.0
	22	30.6	46.0	26.9	40.4	23.0	34.6	19.3	29.0	19.9	29.9	15.9	23.8
	23	29.3	44.0	25.7	38.6	22.0	33.1	18.4	27.7	19.0	28.6	15.2	22.8
	24	28.1	42.2	24.6	37.0	21.1	31.8	17.7	26.6	18.2	27.4	14.5	21.9
	25	26.9	40.5	23.6	35.5	20.3	30.5	17.0	25.5	17.5	26.3	14.0	21.0
	26	25.9	38.9	22.7	34.2	19.5	29.3	16.3	24.5	16.8	25.3	13.4	20.2
	27	24.9	37.5	21.9	32.9	18.8	28.2	15.7	23.6	16.2	24.4	12.9	19.4
	28	24.1	36.2	21.1	31.7	18.1	27.2	15.2	22.8	15.6	23.5	12.5	18.7
	29	23.2	34.9	20.4	30.6	17.5	26.3	14.6	22.0	15.1	22.7	12.0	18.1
	30	22.5	33.7	19.7	29.6	16.9	25.4	14.1	21.3	14.6	21.9	11.6	17.5
	31	21.7	32.7	19.1	28.6	16.4	24.6	13.7	20.6	14.1	21.2	11.3	16.9
	32	21.1	31.6	18.5	27.8	15.8	23.8	13.3	19.9	13.7	20.5	10.9	16.4
	33	20.4	30.7	17.9	26.9	15.4	23.1	12.9	19.3	13.3	19.9	10.6	15.9
	34	19.8	29.8	17.4	26.1	14.9	22.4	12.5	18.8	12.9	19.3	10.3	15.4
	35	19.2	28.9	16.9	25.4	14.5	21.8	12.1	18.2	12.5	18.8	9.97	15.0
	36	18.7	28.1	16.4	24.7	14.1	21.2	11.8	17.7	12.2	18.3	9.70	14.6
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	674	1010	591	888	507	762	424	638	438	658	349	525
M_y/Ω_b	$\phi_b M_y$, kip-ft	65.8	98.9	58.9	88.5	51.8	77.8	44.8	67.4	43.7	65.7	36.4	54.7
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	84.2	127	73.9	111	63.4	95.3	53.0	79.7	54.7	82.2	43.6	65.6
BF_1/Ω_b	$\phi_b BF_1$, kips	10.1	15.2	10.9	16.4	10.8	16.2	9.17	13.8	8.67	13.0	7.96	12.0
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	14.3	21.5	14.0	21.0	13.4	20.2	12.5	18.8	10.7	16.1	10.1	15.1
V_n/Ω_v	$\phi_v V_{nx}$, kips	175	263	140	211	105	158	62.6	94.1	113	171	70.2	106
Z_x, in.^{3}		26.0		22.8		19.5		16.3		16.9		13.5	
L_p, ft		1.92		1.89		1.84		1.78		1.74		1.69	
L_y, ft		3.74		3.26		2.91		2.67		3.00		2.61	
L_r, ft		22.4		18.2		14.9		12.7		16.7		12.8	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-12 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

C9–C7

Table 7-12 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		C9×		C8×						C7×			
		13.4		18.75		13.75		11.5		14.75		12.25	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	119	179	179	269	140	211	92.7	139	122	184	106	160
	3	110	166	119	179	97.9	147	80.9	122	81.5	122	71.0	107
	4	82.6	124	89.6	135	73.4	110	60.7	91.2	61.1	91.9	53.2	80.0
	5	66.1	99.4	71.6	108	58.7	88.3	48.5	73.0	48.9	73.5	42.6	64.0
	6	55.1	82.8	59.7	89.7	48.9	73.6	40.4	60.8	40.7	61.2	35.5	53.3
	7	47.2	71.0	51.2	76.9	41.9	63.0	34.7	52.1	34.9	52.5	30.4	45.7
	8	41.3	62.1	44.8	67.3	36.7	55.2	30.3	45.6	30.6	45.9	26.6	40.0
	9	36.7	55.2	39.8	59.8	32.6	49.0	27.0	40.5	27.2	40.8	23.7	35.5
	10	33.1	49.7	35.8	53.8	29.4	44.1	24.3	36.5	24.4	36.7	21.3	32.0
	11	30.1	45.2	32.6	48.9	26.7	40.1	22.1	33.2	22.2	33.4	19.4	29.1
	12	27.5	41.4	29.9	44.9	24.5	36.8	20.2	30.4	20.4	30.6	17.7	26.7
	13	25.4	38.2	27.6	41.4	22.6	33.9	18.7	28.1	18.8	28.3	16.4	24.6
	14	23.6	35.5	25.6	38.5	21.0	31.5	17.3	26.1	17.5	26.2	15.2	22.9
	15	22.0	33.1	23.9	35.9	19.6	29.4	16.2	24.3	16.3	24.5	14.2	21.3
	16	20.7	31.1	22.4	33.6	18.4	27.6	15.2	22.8	15.3	23.0	13.3	20.0
	17	19.4	29.2	21.1	31.7	17.3	26.0	14.3	21.5	14.4	21.6	12.5	18.8
	18	18.4	27.6	19.9	29.9	16.3	24.5	13.5	20.3	13.6	20.4	11.8	17.8
	19	17.4	26.2	18.9	28.3	15.5	23.2	12.8	19.2	12.9	19.3	11.2	16.8
	20	16.5	24.8	17.9	26.9	14.7	22.1	12.1	18.2	12.2	18.4	10.6	16.0
	21	15.7	23.7	17.1	25.6	14.0	21.0	11.6	17.4	11.6	17.5	10.1	15.2
	22	15.0	22.6	16.3	24.5	13.3	20.1	11.0	16.6	11.1	16.7	9.68	14.5
	23	14.4	21.6	15.6	23.4	12.8	19.2	10.6	15.9	10.6	16.0	9.25	13.9
	24	13.8	20.7	14.9	22.4	12.2	18.4	10.1	15.2	10.2	15.3	8.87	13.3
	25	13.2	19.9	14.3	21.5	11.7	17.7	9.71	14.6	9.78	14.7	8.51	12.8
	26	12.7	19.1	13.8	20.7	11.3	17.0	9.33	14.0	9.40	14.1	8.19	12.3
	27	12.2	18.4	13.3	19.9	10.9	16.3	8.99	13.5	9.05	13.6	7.88	11.8
	28	11.8	17.7	12.8	19.2	10.5	15.8	8.67	13.0	8.73	13.1	7.60	11.4
	29	11.4	17.1	12.4	18.6	10.1	15.2	8.37	12.6	8.43	12.7	7.34	11.0
	30	11.0	16.6	11.9	17.9	9.79	14.7	8.09	12.2	8.15	12.2	7.10	10.7
	31	10.7	16.0	11.6	17.4	9.47	14.2	7.83	11.8	7.89	11.9	6.87	10.3
	32	10.3	15.5	11.2	16.8	9.18	13.8	7.58	11.4	7.64	11.5	6.65	10.0
	33	10.0	15.1	10.9	16.3	8.90	13.4	7.35	11.1	7.41	11.1	6.45	9.69
	34	9.72	14.6	10.5	15.8	8.64	13.0	7.14	10.7	7.19	10.8	6.26	9.41
	35	9.45	14.2	10.2	15.4	8.39	12.6	6.93	10.4	6.98	10.5	6.08	9.14
	36	9.18	13.8	9.95	15.0	8.16	12.3	6.74	10.1	6.79	10.2	5.91	8.89
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	331	497	358	538	294	441	243	365	244	367	213	320
M_y/Ω_b	$\phi_b M_y$, kip-ft	34.7	52.2	35.3	53.0	30.3	45.5	25.7	38.6	24.4	36.7	21.8	32.7
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	41.3	62.1	44.8	67.3	36.7	55.2	30.3	45.6	30.6	45.9	26.6	40.0
BF_1/Ω_b	$\phi_b BF_1$, kips	7.64	11.5	6.25	9.39	6.44	9.67	5.74	8.63	4.69	7.05	4.86	7.31
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	9.83	14.8	8.21	12.3	8.10	12.2	7.43	11.2	6.00	9.02	5.86	8.80
V_n/Ω_v	$\phi_v V_{nx}$, kips	59.4	89.3	112	168	70.1	105	46.3	69.6	80.4	121	61.3	92.1
Z_x, in.^{3}		12.7		13.8		11.3		9.35		9.42		8.20	
L_p, ft		1.66		1.62		1.58		1.55		1.51		1.47	
L_y, ft		2.52		3.15		2.58		2.36		2.81		2.47	
L_r, ft		12.1		18.8		13.6		11.4		16.5		13.4	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

Note 1: Beams must be laterally supported if Table 7-12 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-12 (continued)

Maximum Total Uniform Load, kips

C-Shapes (Welded)

C7–C5

Shape		C7×		C6×						C5×			
		9.8		13		10.5		8.2		9		6.7	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	86.3	130	96.4	145	80.6	121	69.3	104	55.4	83.3	44.4	66.7
	3	61.0	91.6	64.3	96.6	53.7	80.8	46.2	69.4	36.9	55.5	29.6	44.5
	4	45.7	68.7	48.2	72.5	40.3	60.6	34.7	52.1	27.7	41.6	22.2	33.4
	5	36.6	55.0	38.6	58.0	32.2	48.5	27.7	41.7	22.2	33.3	17.8	26.7
	6	30.5	45.8	32.1	48.3	26.9	40.4	23.1	34.7	18.5	27.8	14.8	22.2
	7	26.1	39.3	27.5	41.4	23.0	34.6	19.8	29.8	15.8	23.8	12.7	19.1
	8	22.9	34.4	24.1	36.2	20.1	30.3	17.3	26.0	13.8	20.8	11.1	16.7
	9	20.3	30.5	21.4	32.2	17.9	26.9	15.4	23.1	12.3	18.5	9.86	14.8
	10	18.3	27.5	19.3	29.0	16.1	24.2	13.9	20.8	11.1	16.7	8.88	13.3
	11	16.6	25.0	17.5	26.3	14.7	22.0	12.6	18.9	10.1	15.1	8.07	12.1
	12	15.2	22.9	16.1	24.2	13.4	20.2	11.6	17.4	9.23	13.9	7.40	11.1
	13	14.1	21.1	14.8	22.3	12.4	18.6	10.7	16.0	8.52	12.8	6.83	10.3
	14	13.1	19.6	13.8	20.7	11.5	17.3	9.90	14.9	7.91	11.9	6.34	9.53
	15	12.2	18.3	12.9	19.3	10.7	16.2	9.24	13.9	7.39	11.1	5.92	8.90
	16	11.4	17.2	12.1	18.1	10.1	15.1	8.66	13.0	6.92	10.4	5.55	8.34
	17	10.8	16.2	11.3	17.0	9.48	14.3	8.15	12.3	6.52	9.80	5.22	7.85
	18	10.2	15.3	10.7	16.1	8.96	13.5	7.70	11.6	6.16	9.25	4.93	7.41
	19	9.62	14.5	10.1	15.3	8.48	12.8	7.30	11.0	5.83	8.76	4.67	7.02
	20	9.14	13.7	9.64	14.5	8.06	12.1	6.93	10.4	5.54	8.33	4.44	6.67
	21	8.71	13.1	9.18	13.8	7.68	11.5	6.60	9.92	5.28	7.93	4.23	6.35
	22	8.31	12.5	8.77	13.2	7.33	11.0	6.30	9.47	5.04	7.57	4.04	6.07
	23	7.95	11.9	8.38	12.6	7.01	10.5	6.03	9.06	4.82	7.24	3.86	5.80
	24	7.62	11.5	8.03	12.1	6.72	10.1	5.78	8.68	4.62	6.94	3.70	5.56
	25	7.31	11.0	7.71	11.6	6.45	9.69	5.54	8.33	4.43	6.66	3.55	5.34
	26	7.03	10.6	7.42	11.1	6.20	9.32	5.33	8.01	4.26	6.40	3.41	5.13
	27	6.77	10.2	7.14	10.7	5.97	8.97	5.13	7.72	4.10	6.17	3.29	4.94
	28	6.53	9.82	6.89	10.4	5.76	8.65	4.95	7.44	3.96	5.95	3.17	4.77
	29	6.31	9.48	6.65	9.99	5.56	8.35	4.78	7.18	3.82	5.74	3.06	4.60
	30	6.10	9.16	6.43	9.66	5.37	8.08	4.62	6.94	3.69	5.55	2.96	4.45
	31	5.90	8.87	6.22	9.35	5.20	7.82	4.47	6.72	3.57	5.37	2.86	4.30
	32	5.71	8.59	6.03	9.06	5.04	7.57	4.33	6.51	3.46	5.20	2.77	4.17
	33	5.54	8.33	5.84	8.78	4.88	7.34	4.20	6.31	3.36	5.05	2.69	4.04
	34	5.38	8.08	5.67	8.52	4.74	7.13	4.08	6.13	3.26	4.90	2.61	3.92
	35	5.22	7.85	5.51	8.28	4.61	6.92	3.96	5.95	3.17	4.76	2.54	3.81
	36	5.08	7.63	5.36	8.05	4.48	6.73	3.85	5.79	3.08	4.63	2.47	3.71
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	183	275	193	290	161	242	139	208	111	167	88.8	133
M_y/Ω_b	$\phi_b M_y$, kip-ft	19.3	28.9	19.1	28.7	16.5	24.8	14.6	21.9	11.3	16.9	9.43	14.2
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	22.9	34.4	24.1	36.2	20.1	30.3	17.3	26.0	13.8	20.8	11.1	16.7
BF_1/Ω_b	$\phi_b BF_1$, kips	4.44	6.67	2.98	4.47	3.31	4.97	3.16	4.75	2.08	3.12	1.98	2.97
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	5.58	8.39	4.39	6.59	4.30	6.46	4.12	6.20	2.86	4.30	2.72	4.09
V_n/Ω_v	$\phi_v V_{nx}$, kips	43.2	64.9	75.7	114	52.5	79.0	37.0	55.6	43.8	65.8	25.0	37.5
Z_x, in.^{3}		7.05		7.43		6.21		5.34		4.27		3.42	
L_p, ft		1.43		1.40		1.36		1.31		1.26		1.19	
L_y, ft		2.24		3.08		2.47		2.18		2.50		2.03	
L_r, ft		11.3		19.3		14.3		11.8		15.1		11.2	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-12 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

C4–C3

Table 7-12 (continued)
Maximum Total Uniform Load, kips
C-Shapes (Welded)

Duplex Stainless Steel

$F_y = 65$ ksi

Shape		C4×						C3×					
		7.25		6.25		5.4		6		5		4.1	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	35.3	53.0	31.9	47.9	28.2	42.4	22.6	33.9	19.6	29.5	17.4	26.1
	3	23.5	35.3	21.3	32.0	18.8	28.3	15.0	22.6	13.1	19.7	11.6	17.4
	4	17.6	26.5	15.9	24.0	14.1	21.2	11.3	17.0	9.82	14.8	8.69	13.1
	5	14.1	21.2	12.8	19.2	11.3	17.0	9.03	13.6	7.86	11.8	6.95	10.4
	6	11.8	17.7	10.6	16.0	9.40	14.1	7.52	11.3	6.55	9.84	5.79	8.71
	7	10.1	15.1	9.11	13.7	8.06	12.1	6.45	9.69	5.61	8.44	4.97	7.46
	8	8.81	13.2	7.97	12.0	7.05	10.6	5.64	8.48	4.91	7.38	4.35	6.53
	9	7.83	11.8	7.09	10.7	6.27	9.42	5.02	7.54	4.37	6.56	3.86	5.81
	10	7.05	10.6	6.38	9.59	5.64	8.48	4.51	6.78	3.93	5.91	3.48	5.22
	11	6.41	9.63	5.80	8.72	5.13	7.71	4.10	6.17	3.57	5.37	3.16	4.75
	12	5.88	8.83	5.32	7.99	4.70	7.07	3.76	5.65	3.27	4.92	2.90	4.35
	13	5.42	8.15	4.91	7.37	4.34	6.52	3.47	5.22	3.02	4.54	2.67	4.02
	14	5.04	7.57	4.56	6.85	4.03	6.06	3.22	4.85	2.81	4.22	2.48	3.73
	15	4.70	7.07	4.25	6.39	3.76	5.65	3.01	4.52	2.62	3.94	2.32	3.48
	16	4.41	6.62	3.99	5.99	3.53	5.30	2.82	4.24	2.46	3.69	2.17	3.27
	17	4.15	6.23	3.75	5.64	3.32	4.99	2.66	3.99	2.31	3.47	2.04	3.07
	18	3.92	5.89	3.54	5.33	3.13	4.71	2.51	3.77	2.18	3.28	1.93	2.90
	19	3.71	5.58	3.36	5.05	2.97	4.46	2.38	3.57	2.07	3.11	1.83	2.75
	20	3.53	5.30	3.19	4.79	2.82	4.24	2.26	3.39	1.96	2.95	1.74	2.61
	21	3.36	5.05	3.04	4.57	2.69	4.04	2.15	3.23	1.87	2.81	1.66	2.49
	22	3.21	4.82	2.90	4.36	2.56	3.85	2.05	3.08	1.79	2.68	1.58	2.37
	23	3.07	4.61	2.77	4.17	2.45	3.69	1.96	2.95	1.71	2.57	1.51	2.27
	24	2.94	4.42	2.66	3.99	2.35	3.53	1.88	2.83	1.64	2.46	1.45	2.18
	25	2.82	4.24	2.55	3.83	2.26	3.39	1.81	2.71	1.57	2.36	1.39	2.09
	26	2.71	4.08	2.45	3.69	2.17	3.26	1.74	2.61	1.51	2.27	1.34	2.01
	27	2.61	3.93	2.36	3.55	2.09	3.14	1.67	2.51	1.46	2.19	1.29	1.94
	28	2.52	3.79	2.28	3.42	2.01	3.03	1.61	2.42	1.40	2.11	1.24	1.87
	29	2.43	3.65	2.20	3.31	1.95	2.92	1.56	2.34	1.36	2.04	1.20	1.80
	30	2.35	3.53	2.13	3.20	1.88	2.83	1.50	2.26	1.31	1.97	1.16	1.74
	31	2.27	3.42	2.06	3.09	1.82	2.74	1.46	2.19	1.27	1.91	1.12	1.69
	32	2.20	3.31	1.99	3.00	1.76	2.65	1.41	2.12	1.23	1.85	1.09	1.63
	33	2.14	3.21	1.93	2.91	1.71	2.57	1.37	2.06	1.19	1.79	1.05	1.58
	34	2.07	3.12	1.88	2.82	1.66	2.49	1.33	2.00	1.16	1.74	1.02	1.54
	35	2.01	3.03	1.82	2.74	1.61	2.42	1.29	1.94	1.12	1.69	0.993	1.49
	36	1.96	2.94	1.77	2.66	1.57	2.36	1.25	1.88	1.09	1.64	0.966	1.45
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	70.5	106	63.8	95.9	56.4	84.8	45.1	67.8	39.3	59.1	34.8	52.2
M_y/Ω_b	$\phi_b M_y$, kip-ft	7.14	10.7	6.57	9.87	5.96	8.95	4.51	6.78	4.03	6.05	3.64	5.47
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	8.81	13.2	7.97	12.0	7.05	10.6	5.64	8.48	4.91	7.38	4.35	6.53
BF_1/Ω_b	$\phi_b BF_1$, kips	1.15	1.72	1.23	1.84	1.20	1.81	0.489	0.735	0.558	0.838	0.572	0.860
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	1.75	2.62	1.73	2.60	1.69	2.54	0.977	1.47	0.976	1.47	0.953	1.43
V_n/Ω_v	$\phi_v V_{nx}$, kips	35.0	52.7	28.0	42.1	20.0	30.0	29.4	44.2	21.0	31.6	15.0	22.5
Z_x, in.^{3}		2.72		2.46		2.17		1.74		1.51		1.34	
L_p, ft		1.15		1.11		1.07		1.06		1.01		0.954	
L_y, ft		2.61		2.26		1.98		3.37		2.60		2.19	
L_r, ft		16.5		13.8		11.6		22.2		16.8		13.9	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-12 is used.

MC8–MC4

Table 7-13
Maximum Total Uniform Load, kips
MC-Shapes (Welded)

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		MC8×				MC6×				MC4×			
		19.9[f1]		13.5[f1]		14.6		10[f1]		6.5		6.1	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	77.6	117	50.9	76.5	53.4	80.2	32.9	49.4	15.8	23.8	14.4	21.7
	3	63.0	94.6	33.9	51.0	35.6	53.5	21.9	32.9	10.5	15.8	9.61	14.4
	4	47.2	71.0	25.5	38.3	26.7	40.1	16.4	24.7	7.91	11.9	7.20	10.8
	5	37.8	56.8	20.4	30.6	21.3	32.1	13.1	19.8	6.32	9.51	5.76	8.66
	6	31.5	47.3	17.0	25.5	17.8	26.7	11.0	16.5	5.27	7.92	4.80	7.22
	7	27.0	40.6	14.5	21.9	15.2	22.9	9.39	14.1	4.52	6.79	4.12	6.19
	8	23.6	35.5	12.7	19.1	13.3	20.1	8.21	12.3	3.95	5.94	3.60	5.41
	9	21.0	31.5	11.3	17.0	11.9	17.8	7.30	11.0	3.51	5.28	3.20	4.81
	10	18.9	28.4	10.2	15.3	10.7	16.0	6.57	9.88	3.16	4.75	2.88	4.33
	11	17.2	25.8	9.26	13.9	9.70	14.6	5.97	8.98	2.87	4.32	2.62	3.94
	12	15.7	23.7	8.49	12.8	8.89	13.4	5.48	8.23	2.64	3.96	2.40	3.61
	13	14.5	21.8	7.83	11.8	8.21	12.3	5.05	7.60	2.43	3.66	2.22	3.33
	14	13.5	20.3	7.27	10.9	7.62	11.5	4.69	7.05	2.26	3.40	2.06	3.09
	15	12.6	18.9	6.79	10.2	7.12	10.7	4.38	6.58	2.11	3.17	1.92	2.89
	16	11.8	17.7	6.36	9.57	6.67	10.0	4.11	6.17	1.98	2.97	1.80	2.71
	17	11.1	16.7	5.99	9.00	6.28	9.44	3.87	5.81	1.86	2.80	1.70	2.55
	18	10.5	15.8	5.66	8.50	5.93	8.91	3.65	5.49	1.76	2.64	1.60	2.41
	19	9.94	14.9	5.36	8.06	5.62	8.44	3.46	5.20	1.66	2.50	1.52	2.28
	20	9.44	14.2	5.09	7.65	5.34	8.02	3.29	4.94	1.58	2.38	1.44	2.17
	21	8.99	13.5	4.85	7.29	5.08	7.64	3.13	4.70	1.51	2.26	1.37	2.06
	22	8.59	12.9	4.63	6.96	4.85	7.29	2.99	4.49	1.44	2.16	1.31	1.97
	23	8.21	12.3	4.43	6.65	4.64	6.97	2.86	4.29	1.37	2.07	1.25	1.88
	24	7.87	11.8	4.24	6.38	4.45	6.68	2.74	4.12	1.32	1.98	1.20	1.80
	25	7.56	11.4	4.07	6.12	4.27	6.42	2.63	3.95	1.26	1.90	1.15	1.73
	26	7.26	10.9	3.92	5.89	4.11	6.17	2.53	3.80	1.22	1.83	1.11	1.67
	27	7.00	10.5	3.77	5.67	3.95	5.94	2.43	3.66	1.17	1.76	1.07	1.60
	28	6.75	10.1	3.64	5.47	3.81	5.73	2.35	3.53	1.13	1.70	1.03	1.55
	29	6.51	9.79	3.51	5.28	3.68	5.53	2.27	3.41	1.09	1.64	0.994	1.49
	30	6.30	9.46	3.39	5.10	3.56	5.35	2.19	3.29	1.05	1.58	0.961	1.44
	31	6.09	9.16	3.28	4.94	3.44	5.17	2.12	3.19	1.02	1.53	0.930	1.40
	32	5.90	8.87	3.18	4.78	3.34	5.01	2.05	3.09	0.988	1.49	0.901	1.35
	33	5.72	8.60	3.09	4.64	3.23	4.86	1.99	2.99	0.958	1.44	0.873	1.31
	34	5.56	8.35	3.00	4.50	3.14	4.72	1.93	2.90	0.930	1.40	0.848	1.27
	35	5.40	8.11	2.91	4.37	3.05	4.58	1.88	2.82	0.904	1.36	0.823	1.24
	36	5.25	7.89	2.83	4.25	2.96	4.46	1.83	2.74	0.878	1.32	0.800	1.20
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	189	284	102	153	107	160	65.7	98.8	31.6	47.5	28.8	43.3
M_y/Ω_b	$\phi_b M_y$, kip-ft	20.8	31.2	14.5	21.8	11.2	16.8	7.92	11.9	3.30	4.97	2.97	4.47
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	23.6	35.5	12.7	19.1	13.3	20.1	8.21	12.3	3.95	5.94	3.60	5.41
BF_1/Ω_b	$\phi_b BF_1$, kips	1.29	1.95	1.37	2.06	0.653	0.982	0.753	1.13	0.290	0.436	0.314	0.473
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	3.33	5.00	2.73	4.10	1.78	2.67	1.49	2.24	0.619	0.930	0.585	0.879
V_n/Ω_v	$\phi_v V_{nx}$, kips	38.8	58.3	25.9	38.9	29.1	43.7	19.4	29.2	12.9	19.4	12.9	19.4
Z_x, in.^{3}		16.4		11.3		8.91		6.20		2.64		2.41	
L_p, ft		3.24		3.26		2.41		2.44		1.61		1.40	
L_y, ft		6.10		4.96		5.77		4.25		3.84		3.40	
L_r, ft		46.0		31.8		46.3		30.8		30.9		27.3	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f1] Shape exceeds compact limit for flexure with $F_y = 30$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-13 is used.

Note 2: Available strength tabulated above heavy line is limited by available shear strength.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-13 (continued)
Maximum Total Uniform Load, kips
MC-Shapes (Welded)

MC3–MC2

Shape		MC3×				MC2×					
		4.8		3.5		3		2.4		1.6	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	8.51	12.8	6.03	9.07	3.46	5.20	2.67	4.01	1.89	2.84
	3	5.68	8.53	4.02	6.04	2.31	3.47	1.78	2.67	1.26	1.89
	4	4.26	6.40	3.02	4.53	1.73	2.60	1.33	2.01	0.945	1.42
	5	3.41	5.12	2.41	3.63	1.38	2.08	1.07	1.60	0.756	1.14
	6	2.84	4.27	2.01	3.02	1.15	1.73	0.890	1.34	0.630	0.947
	7	2.43	3.66	1.72	2.59	0.989	1.49	0.763	1.15	0.540	0.812
	8	2.13	3.20	1.51	2.27	0.865	1.30	0.667	1.00	0.472	0.710
	9	1.89	2.84	1.34	2.01	0.769	1.16	0.593	0.892	0.420	0.631
	10	1.70	2.56	1.21	1.81	0.692	1.04	0.534	0.802	0.378	0.568
	11	1.55	2.33	1.10	1.65	0.629	0.946	0.485	0.729	0.344	0.516
	12	1.42	2.13	1.01	1.51	0.577	0.867	0.445	0.669	0.315	0.473
	13	1.31	1.97	0.928	1.39	0.533	0.800	0.411	0.617	0.291	0.437
	14	1.22	1.83	0.862	1.30	0.495	0.743	0.381	0.573	0.270	0.406
	15	1.14	1.71	0.804	1.21	0.462	0.694	0.356	0.535	0.252	0.379
	16	1.06	1.60	0.754	1.13	0.433	0.650	0.334	0.502	0.236	0.355
	17	1.00	1.51	0.710	1.07	0.407	0.612	0.314	0.472	0.222	0.334
	18	0.946	1.42	0.670	1.01	0.385	0.578	0.297	0.446	0.210	0.316
	19	0.896	1.35	0.635	0.954	0.364	0.548	0.281	0.422	0.199	0.299
	20	0.851	1.28	0.603	0.907	0.346	0.520	0.267	0.401	0.189	0.284
	21	0.811	1.22	0.574	0.863	0.330	0.496	0.254	0.382	0.180	0.271
	22	0.774	1.16	0.548	0.824	0.315	0.473	0.243	0.365	0.172	0.258
	23	0.740	1.11	0.524	0.788	0.301	0.452	0.232	0.349	0.164	0.247
	24	0.710	1.07	0.503	0.755	0.288	0.434	0.222	0.334	0.157	0.237
	25	0.681	1.02	0.483	0.725	0.277	0.416	0.214	0.321	0.151	0.227
	26	0.655	0.984	0.464	0.697	0.266	0.400	0.205	0.309	0.145	0.219
	27	0.631	0.948	0.447	0.671	0.256	0.385	0.198	0.297	0.140	0.210
	28	0.608	0.914	0.431	0.648	0.247	0.372	0.191	0.287	0.135	0.203
	29	0.587	0.883	0.416	0.625	0.239	0.359	0.184	0.277	0.130	0.196
	30	0.568	0.853	0.402	0.604	0.231	0.347	0.178	0.267	0.126	0.189
	31	0.549	0.826	0.389	0.585	0.223	0.336	0.172	0.259	0.122	0.183
	32	0.532	0.800	0.377	0.567	0.216	0.325	0.167	0.251	0.118	0.178
	33	0.516	0.776	0.366	0.549	0.210	0.315	0.162	0.243	0.115	0.172
	34	0.501	0.753	0.355	0.533	0.204	0.306	0.157	0.236	0.111	0.167
	35	0.487	0.731	0.345	0.518	0.198	0.297	0.153	0.229	0.108	0.162
	36	0.473	0.711	0.335	0.504	0.192	0.289	0.148	0.223	0.105	0.158
Beam Properties											
W_c/Ω_b	$\phi_b W_c$, kip-ft	17.0	25.6	12.1	18.1	6.92	10.4	5.34	8.02	3.78	5.68
M_y/Ω_b	$\phi_b M_y$, kip-ft	1.74	2.62	1.25	1.89	0.682	1.03	0.544	0.817	0.396	0.595
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	2.13	3.20	1.51	2.27	0.865	1.30	0.667	1.00	0.472	0.710
BF_1/Ω_b	$\phi_b BF_1$, kips	0.147	0.220	0.175	0.263	0.0578	0.0869	0.0637	0.0958	0.0741	0.111
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	0.324	0.486	0.277	0.417	0.124	0.187	0.115	0.173	0.100	0.150
V_n/Ω_v	$\phi_v V_{nx}$, kips	9.70	14.6	6.93	10.4	6.47	9.72	4.62	6.94	3.07	4.62
Z_x, in.^{3}		1.42		1.01		0.578		0.446		0.316	
L_p, ft		1.19		1.11		0.783		0.794		0.805	
L_y, ft		3.82		2.56		3.95		2.74		1.84	
L_r, ft		31.5		20.4		32.9		22.6		14.6	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

Note 1: Beams must be laterally supported if Table 7-13 is used.

MC8–MC4

Table 7-14
Maximum Total Uniform Load, kips
MC-Shapes (Welded)

Duplex Stainless Steel

F_y = 65 ksi

Shape		MC8×				MC6×				MC4×			
		19.9[f2]		13.5[f2]		14.6[f2]		10[f2]		6.5[f2]		6.1[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	161	241	92.1	138	104	156	57.6	86.6	30.8	46.3	31.1	46.8
	3	107	161	61.4	92.3	69.4	104	38.4	57.7	20.6	30.9	20.7	31.2
	4	80.3	121	46.1	69.2	52.0	78.2	28.8	43.3	15.4	23.2	15.6	23.4
	5	64.2	96.5	36.9	55.4	41.6	62.6	23.1	34.6	12.3	18.5	12.4	18.7
	6	53.5	80.5	30.7	46.2	34.7	52.1	19.2	28.9	10.3	15.4	10.4	15.6
	7	45.9	69.0	26.3	39.6	29.7	44.7	16.5	24.7	8.81	13.2	8.89	13.4
	8	40.1	60.3	23.0	34.6	26.0	39.1	14.4	21.7	7.71	11.6	7.78	11.7
	9	35.7	53.6	20.5	30.8	23.1	34.8	12.8	19.2	6.85	10.3	6.92	10.4
	10	32.1	48.3	18.4	27.7	20.8	31.3	11.5	17.3	6.17	9.27	6.22	9.36
	11	29.2	43.9	16.8	25.2	18.9	28.4	10.5	15.7	5.61	8.43	5.66	8.51
	12	26.8	40.2	15.4	23.1	17.3	26.1	9.61	14.4	5.14	7.72	5.19	7.80
	13	24.7	37.1	14.2	21.3	16.0	24.1	8.87	13.3	4.74	7.13	4.79	7.20
	14	22.9	34.5	13.2	19.8	14.9	22.3	8.23	12.4	4.40	6.62	4.45	6.68
	15	21.4	32.2	12.3	18.5	13.9	20.9	7.68	11.5	4.11	6.18	4.15	6.24
	16	20.1	30.2	11.5	17.3	13.0	19.5	7.20	10.8	3.85	5.79	3.89	5.85
	17	18.9	28.4	10.8	16.3	12.2	18.4	6.78	10.2	3.63	5.45	3.66	5.50
	18	17.8	26.8	10.2	15.4	11.6	17.4	6.40	9.62	3.43	5.15	3.46	5.20
	19	16.9	25.4	9.70	14.6	11.0	16.5	6.07	9.12	3.25	4.88	3.28	4.92
	20	16.1	24.1	9.21	13.8	10.4	15.6	5.76	8.66	3.08	4.63	3.11	4.68
	21	15.3	23.0	8.78	13.2	9.91	14.9	5.49	8.25	2.94	4.41	2.96	4.46
	22	14.6	21.9	8.38	12.6	9.46	14.2	5.24	7.87	2.80	4.21	2.83	4.25
	23	14.0	21.0	8.01	12.0	9.05	13.6	5.01	7.53	2.68	4.03	2.71	4.07
	24	13.4	20.1	7.68	11.5	8.67	13.0	4.80	7.22	2.57	3.86	2.59	3.90
	25	12.8	19.3	7.37	11.1	8.32	12.5	4.61	6.93	2.47	3.71	2.49	3.74
	26	12.4	18.6	7.09	10.7	8.00	12.0	4.43	6.66	2.37	3.56	2.39	3.60
	27	11.9	17.9	6.83	10.3	7.71	11.6	4.27	6.42	2.28	3.43	2.31	3.47
	28	11.5	17.2	6.58	9.89	7.43	11.2	4.12	6.19	2.20	3.31	2.22	3.34
	29	11.1	16.6	6.35	9.55	7.18	10.8	3.97	5.97	2.13	3.20	2.15	3.23
	30	10.7	16.1	6.14	9.23	6.94	10.4	3.84	5.77	2.06	3.09	2.07	3.12
	31	10.4	15.6	5.94	8.94	6.71	10.1	3.72	5.59	1.99	2.99	2.01	3.02
	32	10.0	15.1	5.76	8.66	6.50	9.77	3.60	5.41	1.93	2.90	1.95	2.92
	33	9.73	14.6	5.58	8.39	6.31	9.48	3.49	5.25	1.87	2.81	1.89	2.84
	34	9.45	14.2	5.42	8.15	6.12	9.20	3.39	5.10	1.81	2.73	1.83	2.75
	35	9.18	13.8	5.27	7.91	5.95	8.94	3.29	4.95	1.76	2.65	1.78	2.67
	36	8.92	13.4	5.12	7.69	5.78	8.69	3.20	4.81	1.71	2.57	1.73	2.60
Beam Properties													
W_c/Ω_b	$\phi_b W_c$, kip-ft	321	483	184	277	208	313	115	173	61.7	92.7	62.2	93.6
M_y/Ω_b	$\phi_b M_y$, kip-ft	45.0	67.7	31.5	47.3	24.2	36.3	17.2	25.8	7.16	10.8	6.44	9.69
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	40.1	60.3	23.0	34.6	26.0	39.1	14.4	21.7	7.71	11.6	7.78	11.7
BF_1/Ω_b	$\phi_b BF_1$, kips	4.57	6.86	4.02	6.05	2.50	3.76	2.52	3.79	1.11	1.67	1.21	1.82
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	9.63	14.5	7.68	11.6	5.15	7.74	4.30	6.46	1.79	2.70	1.70	2.55
V_n/Ω_v	$\phi_v V_{nx}$, kips	84.1	126	55.1	82.8	63.1	94.8	42.0	63.2	28.0	42.1	28.0	42.1
Z_x, in.^{3}		16.4		11.3		8.91		6.20		2.64		2.41	
L_p, ft		2.74		2.76		2.04		2.06		1.36		1.18	
L_y, ft		4.50		4.01		3.93		3.23		2.62		2.31	
L_r, ft		23.9		17.9		23.5		16.3		15.7		13.9	

ASD	LRFD
Ω_b = 1.67	ϕ_b = 0.90
Ω_v = 1.67	ϕ_v = 0.90

[f2] Shape exceeds compact limit for flexure with F_y = 65 ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-14 is used.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-14 (continued)
Maximum Total Uniform Load, kips
MC-Shapes (Welded)

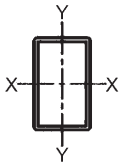
MC3–MC2

Shape		MC3×				MC2×					
		4.8		3.5[f2]		3		2.4		1.6[f2]	
Design		ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD
Span, ft	2	18.4	27.7	12.1	18.2	7.50	11.3	5.78	8.69	3.53	5.30
	3	12.3	18.5	8.06	12.1	5.00	7.52	3.86	5.80	2.35	3.53
	4	9.22	13.9	6.04	9.08	3.75	5.64	2.89	4.35	1.76	2.65
	5	7.38	11.1	4.83	7.27	3.00	4.51	2.31	3.48	1.41	2.12
	6	6.15	9.24	4.03	6.05	2.50	3.76	1.93	2.90	1.18	1.77
	7	5.27	7.92	3.45	5.19	2.14	3.22	1.65	2.48	1.01	1.51
	8	4.61	6.93	3.02	4.54	1.88	2.82	1.45	2.17	0.882	1.33
	9	4.10	6.16	2.69	4.04	1.67	2.51	1.29	1.93	0.784	1.18
	10	3.69	5.55	2.42	3.63	1.50	2.25	1.16	1.74	0.705	1.06
	11	3.35	5.04	2.20	3.30	1.36	2.05	1.05	1.58	0.641	0.964
	12	3.07	4.62	2.01	3.03	1.25	1.88	0.964	1.45	0.588	0.883
	13	2.84	4.27	1.86	2.79	1.15	1.73	0.890	1.34	0.543	0.815
	14	2.64	3.96	1.73	2.59	1.07	1.61	0.826	1.24	0.504	0.757
	15	2.46	3.70	1.61	2.42	1.00	1.50	0.771	1.16	0.470	0.707
	16	2.31	3.47	1.51	2.27	0.938	1.41	0.723	1.09	0.441	0.663
	17	2.17	3.26	1.42	2.14	0.882	1.33	0.680	1.02	0.415	0.624
	18	2.05	3.08	1.34	2.02	0.833	1.25	0.643	0.966	0.392	0.589
	19	1.94	2.92	1.27	1.91	0.790	1.19	0.609	0.915	0.371	0.558
	20	1.84	2.77	1.21	1.82	0.750	1.13	0.578	0.869	0.353	0.530
	21	1.76	2.64	1.15	1.73	0.714	1.07	0.551	0.828	0.336	0.505
	22	1.68	2.52	1.10	1.65	0.682	1.02	0.526	0.790	0.321	0.482
	23	1.60	2.41	1.05	1.58	0.652	0.980	0.503	0.756	0.307	0.461
	24	1.54	2.31	1.01	1.51	0.625	0.939	0.482	0.724	0.294	0.442
	25	1.48	2.22	0.967	1.45	0.600	0.902	0.463	0.695	0.282	0.424
	26	1.42	2.13	0.930	1.40	0.577	0.867	0.445	0.669	0.271	0.408
	27	1.37	2.05	0.895	1.35	0.556	0.835	0.428	0.644	0.261	0.393
	28	1.32	1.98	0.863	1.30	0.536	0.805	0.413	0.621	0.252	0.379
	29	1.27	1.91	0.833	1.25	0.517	0.777	0.399	0.600	0.243	0.366
	30	1.23	1.85	0.806	1.21	0.500	0.752	0.386	0.580	0.235	0.353
	31	1.19	1.79	0.780	1.17	0.484	0.727	0.373	0.561	0.228	0.342
	32	1.15	1.73	0.755	1.14	0.469	0.705	0.361	0.543	0.220	0.331
	33	1.12	1.68	0.732	1.10	0.455	0.683	0.351	0.527	0.214	0.321
	34	1.09	1.63	0.711	1.07	0.441	0.663	0.340	0.511	0.207	0.312
	35	1.05	1.58	0.691	1.04	0.429	0.644	0.331	0.497	0.202	0.303
	36	1.02	1.54	0.671	1.01	0.417	0.626	0.321	0.483	0.196	0.294
Beam Properties											
W_c/Ω_b	$\phi_b W_c$, kip-ft	36.9	55.5	24.2	36.3	15.0	22.5	11.6	17.4	7.05	10.6
M_y/Ω_b	$\phi_b M_y$, kip-ft	3.78	5.68	2.72	4.09	1.48	2.22	1.18	1.77	0.858	1.29
M_{FLB}/Ω_b	$\phi_b M_{FLB}$, kip-ft	4.61	6.93	3.02	4.54	1.88	2.82	1.45	2.17	0.882	1.33
BF_1/Ω_b	$\phi_b BF_1$, kips	0.570	0.857	0.666	1.00	0.217	0.326	0.247	0.371	0.281	0.423
BF_2/Ω_b	$\phi_b BF_2$, kip-ft$^{0.6}$	0.938	1.41	0.804	1.21	0.360	0.541	0.334	0.501	0.290	0.436
V_n/Ω_v	$\phi_v V_{nx}$, kips	21.0	31.6	15.0	22.6	14.0	21.1	10.0	15.0	6.66	10.0
Z_x, in.^{3}		1.42		1.01		0.578		0.446		0.316	
L_p, ft		1.01		0.936		0.662		0.671		0.680	
L_y, ft		2.47		1.76		2.49		1.76		1.27	
L_r, ft		15.8		10.4		16.5		11.4		7.44	

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$
$\Omega_v = 1.67$	$\phi_v = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Note 1: Beams must be laterally supported if Table 7-14 is used.



HSS16–HSS8

Table 7-15
Available Flexural Strength, kip-ft
Rectangular HSS

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		X-Axis		Y-Axis		Shape		X-Axis		Y-Axis	
		M_n/Ω_b	$\phi_b M_n$	M_n/Ω_b	$\phi_b M_n$			M_n/Ω_b	$\phi_b M_n$	M_n/Ω_b	$\phi_b M_n$
		ASD	LRFD	ASD	LRFD			ASD	LRFD	ASD	LRFD
HSS16×8×	0.500	162	243	99.9	150	HSS10×8×	0.500	79.0	119	67.8	102
	0.375	125	188	66.1	99.3		0.375	61.7	92.7	53.0	79.6
	0.312	106	159	50.0	75.1		0.312	52.3	78.7	45.0	67.6
	0.250	86.1	129	35.7	53.7		0.250	42.9	64.5	32.3	48.5
HSS14×10×	0.500	151	227	120	180	HSS10×6×	0.500	65.5	98.4	45.8	68.9
	0.375	116	175	92.5	139		0.375	51.4	77.3	36.1	54.3
	0.312	98.2	148	64.4	96.8		0.312	43.7	65.7	30.8	46.2
	0.250	67.6	102	46.5	70.0		0.250	35.9	54.0	22.4	33.7
							0.180	26.5	39.8	13.7	20.5
HSS14×8×	0.500	131	198	89.2	134						
	0.375	102	153	69.3	104	HSS10×4×	0.375	41.1	61.8	21.4	32.1
	0.312	86.1	129	48.5	72.9		0.312	35.1	52.8	18.3	27.5
	0.250	70.3	106	34.8	52.4		0.250	29.0	43.6	13.5	20.3
HSS14×6×	0.500	112	169	61.5	92.5	HSS10×2×*	0.250	22.0	33.1	5.57	8.36
	0.375	87.3	131	48.1	72.3		0.180	16.4	24.7	3.41	5.13
	0.312	73.9	111	33.8	50.8						
	0.250	60.5	90.9	24.2	36.3	HSS9×5×	0.500	49.5	74.4	32.7	49.1
							0.375	39.2	58.9	26.0	39.1
HSS12×10×	0.500	120	181	106	160		0.250	27.6	41.5	18.4	27.6
	0.375	93.1	140	82.3	124						
	0.312	78.7	118	66.5	99.9	HSS9×3×	0.375	30.0	45.0	13.4	20.1
	0.250	54.9	82.5	45.0	67.7		0.250	21.3	32.1	9.67	14.5
							0.180	15.9	23.9	5.57	8.37
HSS12×8×	0.500	104	156	78.5	118						
	0.375	80.7	121	61.1	91.9	HSS8×6×	0.500	46.4	69.7	38.0	57.1
	0.312	68.3	103	49.7	74.6		0.375	36.7	55.1	30.1	45.2
	0.250	55.9	84.0	33.7	50.7		0.312	31.3	47.1	25.7	38.6
							0.250	25.8	38.8	21.2	31.9
HSS12×6×	0.500	87.4	131	53.7	80.7		0.180	19.1	28.7	13.0	19.5
	0.375	68.3	103	42.1	63.3						
	0.312	57.9	87.1	34.4	51.7	HSS8×4×	0.375	28.5	42.9	17.5	26.3
	0.250	47.5	71.4	23.4	35.2		0.312	24.5	36.8	15.0	22.6
							0.250	20.3	30.5	12.5	18.8
HSS12×4×	0.375	55.9	84.0	25.2	37.9		0.180	15.1	22.7	7.77	11.7
	0.312	47.6	71.5	20.7	31.2		0.120	10.3	15.5	4.19	6.29
	0.250	39.1	58.8	14.1	21.2						
	0.180	28.8	43.3	8.42	12.7						

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

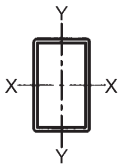
* Shape exceeds maximum aspect ratio of $h/b = 3$. Beams must be laterally supported if Table 7-15 is used.

NOTE: Values are reduced for width-to-thickness criteria, when appropriate. See Table 4-6C for limiting dimensions for compactness.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-15 (continued)
Available Flexural Strength, kip-ft
Rectangular HSS



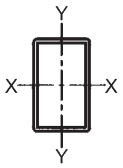
HSS8–HSS3

Shape		X-Axis		Y-Axis		Shape		X-Axis		Y-Axis	
		M_n/Ω_b	$\phi_b M_n$	M_n/Ω_b	$\phi_b M_n$			M_n/Ω_b	$\phi_b M_n$	M_n/Ω_b	$\phi_b M_n$
		ASD	LRFD	ASD	LRFD			ASD	LRFD	ASD	LRFD
HSS8×2×*	0.312	17.7	26.5	6.16	9.26	HSS5×3×	0.375	11.1	16.7	7.74	11.6
	0.250	14.8	22.2	5.23	7.86		0.312	9.73	14.6	6.79	10.2
	0.180	11.1	16.6	3.26	4.90		0.250	8.20	12.3	5.74	8.62
	0.120	7.65	11.5	1.74	2.61		0.180	6.21	9.33	4.36	6.55
							0.120	4.32	6.49	2.63	3.95
HSS7×5×	0.500	33.2	50.0	26.3	39.5						
	0.375	26.6	39.9	21.0	31.6	HSS5×2×	0.250	6.50	9.78	3.34	5.03
	0.250	18.9	28.4	15.0	22.5		0.180	4.97	7.47	2.58	3.88
	0.180	14.0	21.1	10.4	15.6		0.120	3.49	5.24	1.58	2.38
HSS7×4×	0.375	23.0	34.6	15.5	23.3	HSS4×3×	0.250	5.81	8.73	4.75	7.15
	0.250	16.5	24.7	11.2	16.8		0.180	4.43	6.66	3.64	5.46
							0.120	3.10	4.67	2.55	3.84
HSS7×3×	0.375	19.5	29.3	10.6	15.9		0.080	2.14	3.21	1.37	2.05
	0.250	14.1	21.1	7.71	11.6						
	0.180	10.5	15.8	5.45	8.19	HSS4×2×	0.375	5.82	8.75	3.49	5.25
							0.312	5.20	7.81	3.14	4.72
HSS6×4×	0.375	18.0	27.1	13.6	20.4		0.250	4.47	6.71	2.72	4.08
	0.312	15.6	23.4	11.8	17.7		0.180	3.45	5.19	2.12	3.18
	0.250	13.0	19.5	9.83	14.8		0.120	2.44	3.67	1.51	2.26
	0.180	9.73	14.6	7.37	11.1		0.080	1.69	2.54	0.813	1.22
	0.120	6.71	10.1	3.96	5.95						
						HSS4×1.5×	0.180	2.96	4.45	1.45	2.18
HSS6×3×	0.375	15.0	22.6	9.15	13.8		0.120	2.11	3.17	1.05	1.57
	0.312	13.1	19.6	7.98	12.0		0.083	1.52	2.28	0.600	0.901
	0.250	11.0	16.5	6.72	10.1		0.063	1.18	1.77	0.391	0.588
	0.180	8.24	12.4	5.08	7.64						
	0.120	5.71	8.58	2.74	4.12	HSS3×2×	0.250	2.79	4.19	2.09	3.14
							0.180	2.19	3.29	1.65	2.48
HSS6×2×	0.312	10.5	15.8	4.65	6.99		0.120	1.57	2.35	1.18	1.78
	0.250	8.90	13.4	3.97	5.97		0.080	1.09	1.64	0.829	1.25
	0.180	6.75	10.1	3.05	4.59						
	0.120	4.70	7.07	1.65	2.48	HSS3×1.5×	0.250	2.29	3.45	1.38	2.08
							0.180	1.83	2.74	1.11	1.67
HSS5×4×	0.375	13.6	20.5	11.6	17.5		0.120	1.32	1.98	0.811	1.22
	0.312	11.8	17.8	10.1	15.2		0.083	0.959	1.44	0.592	0.890
	0.250	9.90	14.9	8.49	12.8		0.060	0.713	1.07	0.343	0.515
	0.180	7.44	11.2	6.39	9.61						
	0.120	5.15	7.75	3.79	5.70	HSS3×1×	0.120	1.07	1.61	0.480	0.722
							0.080	0.761	1.14	0.345	0.519
							0.060	0.588	0.883	0.206	0.310

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

* Shape exceeds maximum aspect ratio of $h/b = 3$. Beams must be laterally supported if Table 7-15 is used.

NOTE: Values are reduced for width-to-thickness criteria, when appropriate. See Table 4-6C for limiting dimensions for compactness.



HSS2.5–HSS1.5

Table 7-15 (continued)
Available Flexural Strength, kip-ft
Rectangular HSS

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		X-Axis		Y-Axis	
		M_n/Ω_b	$\phi_b M_n$	M_n/Ω_b	$\phi_b M_n$
		ASD	LRFD	ASD	LRFD
HSS2.5×1.5×	0.180	1.35	2.03	0.941	1.41
	0.120	0.990	1.49	0.693	1.04
	0.083	0.723	1.09	0.508	0.764
	0.063	0.565	0.849	0.355	0.533
HSS2.5×1×	0.120	0.786	1.18	0.405	0.609
	0.083	0.580	0.872	0.302	0.454
	0.063	0.456	0.685	0.214	0.321
HSS2×1.5×	0.120	0.702	1.05	0.575	0.864
	0.080	0.501	0.753	0.411	0.618
	0.060	0.388	0.583	0.319	0.479
HSS2×1×	0.120	0.541	0.813	0.329	0.495
	0.080	0.391	0.588	0.240	0.361
	0.060	0.305	0.459	0.188	0.283
HSS1.5×1×	0.120	0.338	0.508	0.254	0.381
	0.080	0.249	0.374	0.188	0.282
	0.060	0.196	0.294	0.148	0.223

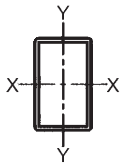
ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

NOTE: Values are reduced for width-to-thickness criteria, when appropriate. See Table 4-6C for limiting dimensions for compactness.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-16
Available Flexural Strength, kip-ft
Rectangular HSS

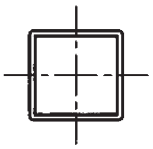


HSS16–HSS1.5

Shape		X-Axis		Y-Axis	
		M_n/Ω_b	$\phi_b M_n$	M_n/Ω_b	$\phi_b M_n$
		ASD	LRFD	ASD	LRFD
HSS16×8×	0.250	146	220	63.2	95.0
HSS12×8×	0.250	96.4	145	60.1	90.4
HSS12×4×	0.250	84.8	127	24.1	36.2
	0.180	48.2	72.4	14.5	21.8
HSS10×6×	0.250	77.9	117	39.5	59.4
	0.180	44.7	67.1	24.3	36.5
HSS8×4×	0.250	44.0	66.1	22.2	33.3
	0.180	32.7	49.1	13.6	20.4
	0.120	17.1	25.7	7.41	11.1
HSS6×4×	0.250	28.2	42.3	21.3	32.0
	0.180	21.1	31.7	12.8	19.2
	0.120	11.4	17.1	7.06	10.6
HSS4×3×	0.120	6.73	10.1	4.42	6.65
	0.080	3.46	5.20	2.46	3.69
HSS4×2×	0.120	5.29	7.95	2.61	3.92
	0.080	3.66	5.51	1.42	2.14
HSS3×2×	0.120	3.39	5.10	2.57	3.86
	0.080	2.37	3.56	1.35	2.02
HSS3×1×	0.080	1.65	2.48	0.546	0.821
	0.060	1.27	1.91	0.353	0.531
HSS2×1.5×	0.080	1.08	1.63	0.891	1.34
	0.060	0.841	1.26	0.553	0.831
HSS2×1×	0.080	0.848	1.27	0.521	0.783
	0.060	0.661	0.994	0.326	0.490
HSS1.5×1×	0.080	0.539	0.811	0.407	0.612
	0.060	0.424	0.638	0.321	0.482

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

NOTE: Values are reduced for width-to-thickness criteria, when appropriate. See Table 4-6C for limiting dimensions for compactness.



HSS12–HSS1

Table 7-17
Available Flexural Strength, kip-ft
Square HSS

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD	Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD
HSS12×12×	0.500	137	205	HSS3.5×3.5×	0.250	5.33	8.00
	0.375	106	159		0.180	4.07	6.11
	0.312	84.9	128		0.120	2.85	4.28
	0.250	57.3	86.1		0.0830	1.71	2.57
HSS10×10×	0.500	92.6	139	HSS3×3×	0.250	3.77	5.67
	0.375	72.0	108		0.180	2.91	4.38
	0.312	60.9	91.6		0.120	2.06	3.09
	0.250	43.1	64.8		0.0800	1.43	2.14
HSS8×8×	0.500	57.1	85.8	HSS2.5×2.5×	0.250	2.48	3.73
	0.375	44.8	67.4		0.180	1.95	2.93
	0.312	38.1	57.3		0.120	1.40	2.10
	0.250	31.3	47.1		0.0800	0.976	1.47
	0.180	18.9	28.4		0.0600	0.634	0.952
HSS7×7×	0.375	33.6	50.6	HSS2×2×	0.250	1.46	2.20
	0.312	28.7	43.2		0.180	1.18	1.77
	0.250	23.7	35.6		0.120	0.863	1.30
					0.0800	0.610	0.917
HSS6×6×	0.500	30.1	45.3		0.0600	0.471	0.708
	0.375	24.1	36.2				
	0.312	20.6	31.0	HSS1.75×1.75×	0.180	0.866	1.30
	0.250	17.1	25.7		0.120	0.643	0.967
	0.180	12.7	19.1		0.0830	0.475	0.713
	0.120	6.74	10.1		0.0630	0.372	0.560
HSS5×5×	0.375	16.1	24.2	HSS1.5×1.5×	0.180	0.601	0.903
	0.312	13.9	20.9		0.120	0.456	0.686
	0.250	11.6	17.4		0.0800	0.330	0.496
	0.180	8.68	13.0		0.0600	0.257	0.387
	0.120	5.07	7.62				
				HSS1.25×1.25×	0.120	0.301	0.453
HSS4×4×	0.375	9.70	14.6		0.0800	0.222	0.334
	0.312	8.48	12.7		0.0600	0.175	0.262
	0.250	7.15	10.7				
	0.180	5.41	8.13	HSS1×1×	0.120	0.178	0.268
	0.120	3.77	5.66		0.0800	0.135	0.203
	0.0830	2.11	3.17		0.0600	0.108	0.162

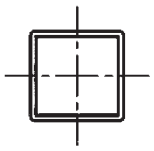
ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

NOTE: Values are reduced for width-to-thickness criteria, when appropriate. See Table 4-6C for limiting dimensions for compactness.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-18
Available Flexural Strength, kip-ft
Square HSS

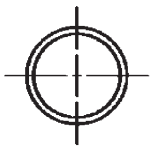


HSS12–HSS1

Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD
HSS12×12×	0.250	105	158
HSS10×10×	0.250	78.6	118
HSS8×8×	0.250	55.1	82.9
	0.180	34.6	52.0
HSS6×6×	0.250	37.1	55.7
	0.180	21.9	32.9
	0.120	12.4	18.6
HSS5×5×	0.250	25.1	37.8
	0.180	17.8	26.8
	0.120	9.25	13.9
HSS4×4×	0.250	15.5	23.3
	0.180	11.7	17.6
	0.120	6.49	9.76
HSS3.5×3.5×	0.180	8.81	13.2
	0.120	5.25	7.89
HSS3×3×	0.120	4.46	6.71
	0.0800	2.32	3.49
HSS2.5×2.5×	0.120	3.03	4.55
	0.0800	1.74	2.61
HSS2×2×	0.0800	1.32	1.99
	0.0600	0.812	1.22
HSS1.5×1.5×	0.0800	0.715	1.07
	0.0600	0.558	0.838
HSS1.25×1.25×	0.0800	0.481	0.723
	0.0600	0.378	0.569
HSS1×1×	0.0600	0.234	0.351

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

NOTE: Values are reduced for width-to-thickness criteria, when appropriate. See Table 4-6C for limiting dimensions for compactness.



HSS7.500–HSS2.500

Table 7-19
Available Flexural Strength, kip-ft
Round HSS

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD	Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD
HSS7.500×	0.375	27.2	40.9	HSS3.125×	0.250	2.98	4.47
	0.250	18.8	28.3		0.180	2.24	3.36
	0.180	13.8	20.7		0.120	1.55	2.33
	0.120	9.31	14.0		0.109	1.42	2.14
					0.0830	1.10	1.65
HSS6.250×	0.375	18.5	27.9		0.0630	0.843	1.27
	0.250	12.9	19.4				
	0.180	9.46	14.2	HSS3.000×	0.250	2.72	4.10
	0.120	6.43	9.66		0.180	2.05	3.08
					0.148	1.73	2.60
HSS5.000×	0.250	8.09	12.2		0.120	1.42	2.14
	0.180	5.97	8.98		0.109	1.31	1.96
	0.120	4.07	6.12		0.0830	1.01	1.52
	0.109	3.73	5.61		0.0630	0.775	1.17
	0.0830	2.86	4.30		0.0490	0.609	0.915
HSS4.500×	0.250	6.48	9.74	HSS2.875×	0.180	1.87	2.82
	0.180	4.80	7.21		0.120	1.30	1.96
	0.148	4.01	6.03		0.109	1.20	1.80
	0.120	3.28	4.94		0.0830	0.924	1.39
	0.109	3.01	4.52				
	0.0830	2.31	3.47	HSS2.750×	0.250	2.25	3.39
					0.180	1.71	2.56
HSS4.000×	0.120	2.58	3.87		0.148	1.44	2.16
	0.109	2.36	3.55		0.120	1.19	1.78
	0.0830	1.82	2.73		0.109	1.09	1.64
					0.0830	0.843	1.27
HSS3.750×	0.250	4.40	6.62		0.0650	0.669	1.01
	0.180	3.28	4.93				
	0.148	2.75	4.13	HSS2.500×	0.250	1.83	2.75
	0.120	2.26	3.39		0.180	1.39	2.09
	0.109	2.07	3.11		0.148	1.18	1.77
	0.0830	1.59	2.39		0.120	0.972	1.46
					0.109	0.894	1.34
HSS3.500×	0.180	2.84	4.27		0.0830	0.693	1.04
	0.148	2.38	3.58		0.0630	0.534	0.803
	0.120	1.96	2.94		0.0490	0.420	0.631
	0.109	1.80	2.70				
	0.0830	1.38	2.08				
	0.0630	1.06	1.60				
	0.0490[f1]	0.814	1.22				

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

[f1] Shape exceeds compact limit for flexure with $F_y = 30$ ksi; tabulated values have been adjusted accordingly.

Austenitic Stainless Steel

$F_y = 30$ ksi

Table 7-19 (continued)
Available Flexural Strength, kip-ft
Round HSS

HSS2.375–HSS1.000

Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD	Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD
HSS2.375×	0.180	1.25	1.87	HSS1.660×	0.148	0.488	0.734
	0.148	1.05	1.59		0.120	0.409	0.614
	0.120	0.873	1.31		0.109	0.378	0.567
	0.109	0.804	1.21		0.0830	0.296	0.444
	0.0830	0.623	0.936		0.0630	0.230	0.345
	0.0630	0.481	0.723				
	0.0490	0.378	0.569	HSS1.500×	0.120	0.329	0.494
					0.109	0.304	0.457
HSS2.250×	0.180	1.11	1.67		0.0830	0.239	0.359
	0.148	0.940	1.41		0.0630	0.186	0.280
	0.120	0.779	1.17		0.0490	0.147	0.222
	0.109	0.718	1.08		0.0350	0.107	0.161
	0.0830	0.557	0.837				
	0.0630	0.430	0.647	HSS1.250×	0.120	0.221	0.332
					0.109	0.205	0.308
HSS2.000×	0.180	0.859	1.29		0.0830	0.162	0.244
	0.148	0.731	1.10		0.0630	0.127	0.191
	0.120	0.608	0.913		0.0490	0.101	0.152
	0.109	0.560	0.842		0.0350	0.0738	0.111
	0.0830	0.436	0.656				
	0.0630	0.338	0.507	HSS1.000×	0.120	0.135	0.202
	0.0490	0.266	0.400		0.109	0.126	0.189
	0.0350	0.193	0.290		0.0830	0.100	0.151
					0.0650	0.0816	0.123
HSS1.900×	0.148	0.654	0.984		0.0630	0.0794	0.119
	0.120	0.545	0.819		0.0490	0.0635	0.0954
	0.109	0.503	0.756		0.0420	0.0551	0.0828
	0.0830	0.392	0.589		0.0350	0.0466	0.0700
	0.0630	0.304	0.457		0.0320	0.0428	0.0643
	0.0490	0.240	0.360				
	0.0350	0.174	0.261				
HSS1.750×	0.120	0.458	0.688				
	0.109	0.422	0.635				
	0.0830	0.330	0.496				
	0.0630	0.256	0.385				
	0.0490	0.202	0.304				
	0.0350	0.147	0.221				

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

HSS7.500–HSS2.500

Table 7-20
Available Flexural Strength, kip-ft
Round HSS

Duplex Stainless Steel

$F_y = 65$ ksi

Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD	Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD
HSS7.500×	0.375	59.0	88.6	HSS3.125×	0.250	6.45	9.69
	0.250	40.7	61.2		0.180	4.85	7.28
	0.180[f2]	27.8	41.8		0.120	3.35	5.04
	0.120[f2]	17.8	26.8		0.109	3.08	4.63
					0.0830[f2]	2.25	3.38
HSS6.250×	0.375	40.2	60.4		0.0630[f2]	1.66	2.49
	0.250	27.9	42.0				
	0.180[f2]	19.7	29.6	HSS3.000×	0.250	5.90	8.87
	0.120[f2]	12.6	18.9		0.180	4.44	6.68
					0.148	3.74	5.62
HSS5.000×	0.250	17.5	26.3		0.120	3.08	4.63
	0.180	12.9	19.4		0.109	2.83	4.25
	0.120[f2]	8.23	12.4		0.0830[f2]	2.08	3.13
	0.109[f2]	7.43	11.2		0.0630[f2]	1.54	2.31
	0.0830[f2]	5.50	8.27		0.0490[f2]	1.17	1.76
HSS4.500×	0.250	14.0	21.1	HSS2.875×	0.180	4.06	6.10
	0.180	10.4	15.6		0.120	2.82	4.24
	0.148	8.69	13.1		0.109	2.59	3.89
	0.120[f2]	6.75	10.1		0.0830[f2]	1.92	2.89
	0.109[f2]	6.09	9.15				
	0.0830[f2]	4.50	6.76	HSS2.750×	0.250	4.89	7.34
					0.180	3.69	5.55
HSS4.000×	0.120	5.59	8.39		0.148	3.12	4.68
	0.109[f2]	4.87	7.33		0.120	2.57	3.86
	0.0830[f2]	3.59	5.40		0.109	2.36	3.55
					0.0830	1.83	2.75
HSS3.750×	0.250	9.54	14.3		0.0650[f2]	1.35	2.03
	0.180	7.11	10.7				
	0.148	5.96	8.96	HSS2.500×	0.250	3.96	5.96
	0.120	4.89	7.35		0.180	3.01	4.53
	0.109[f2]]	4.32	6.49		0.148	2.55	3.83
	0.0830[f2]	3.18	4.78		0.120	2.11	3.17
					0.109	1.94	2.91
HSS3.500×	0.180	6.15	9.25		0.0830	1.50	2.26
	0.148	5.16	7.76		0.0630[f2]	1.09	1.63
	0.120	4.24	6.37		0.0490[f2]	0.824	1.24
	0.109	3.89	5.85				
	0.0830[f2]	2.79	4.19				
	0.0630[f2]	2.06	3.10				
	0.0490[f2]	1.57	2.36				

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-20 (continued)
Available Flexural Strength, kip-ft
Round HSS

HSS2.375–HSS1.000

Shape		M_n/Ω_b ASD	$\phi_b M_n$ LRFD
HSS2.375×	0.180	2.70	4.06
	0.148	2.29	3.44
	0.120	1.89	2.84
	0.109	1.74	2.62
	0.0830	1.35	2.03
	0.0630[f2]	0.987	1.48
	0.0490[f2]	0.748	1.12
HSS2.250×	0.180	2.40	3.61
	0.148	2.04	3.06
	0.120	1.69	2.54
	0.109	1.55	2.34
	0.0830	1.21	1.81
	0.0630[f2]	0.891	1.34
HSS2.000×	0.180	1.86	2.80
	0.148	1.58	2.38
	0.120	1.32	1.98
	0.109	1.21	1.82
	0.0830	0.945	1.42
	0.0630	0.732	1.10
	0.0490[f2]	0.540	0.811
	0.0350[f2]	0.373	0.561
HSS1.900×	0.148	1.42	2.13
	0.120	1.18	1.78
	0.109	1.09	1.64
	0.0830	0.849	1.28
	0.0630	0.658	0.989
	0.0490[f2]	0.490	0.736
	0.0350[f2]	0.338	0.508
HSS1.750×	0.120	0.991	1.49
	0.109	0.915	1.38
	0.0830	0.715	1.07
	0.0630	0.555	0.834
	0.0490[f2]	0.419	0.630
	0.0350[f2]	0.289	0.435
HSS1.660×	0.148	1.06	1.59
	0.120	0.885	1.33
	0.109	0.818	1.23
	0.0830	0.640	0.962
	0.0630	0.498	0.748
HSS1.500×	0.120	0.712	1.07
	0.109	0.659	0.990
	0.0830	0.517	0.778
	0.0630	0.403	0.606
	0.0490	0.319	0.480
	0.0350[f2]	0.216	0.324
HSS1.250×	0.120	0.479	0.720
	0.109	0.444	0.668
	0.0830	0.352	0.528
	0.0630	0.275	0.414
	0.0490	0.219	0.329
	0.0350[f2]	0.153	0.230
HSS1.000×	0.120	0.292	0.439
	0.109	0.272	0.409
	0.0830	0.218	0.327
	0.0650	0.177	0.266
	0.0630	0.172	0.258
	0.0490	0.137	0.207
	0.0420	0.119	0.179
	0.0350	0.101	0.152
	0.0320	0.0927	0.139

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

PIPE 12–PIPE 1

Table 7-21
Available Flexural Strength, kip-ft
Pipe

Austenitic Stainless Steel

$F_y = 30$ ksi

Shape	M_n/Ω_b ASD	$\phi_b M_n$ LRFD	Shape	M_n/Ω_b ASD	$\phi_b M_n$ LRFD
Pipe 12 Std 40S	82.5	124	Pipe 2 Std 80S	1.47	2.21
Pipe 12 Std 10S[f1]	40.0	60.1	Pipe 2 Std 40S	1.09	1.64
			Pipe 2 Std 10S	0.807	1.21
Pipe 10 Std 40S	56.8	85.3	Pipe 2 Std 5S	0.497	0.747
Pipe 10 Std 10S	26.6	40.0			
			Pipe 1½ Std 80S	0.835	1.26
Pipe 8 Std 80S	47.3	71.2	Pipe 1½ Std 40S	0.643	0.966
Pipe 8 Std 40S	31.8	47.7	Pipe 1½ Std 10S	0.503	0.756
Pipe 8 Std 10S	15.2	22.9	Pipe 1½ Std 5S	0.313	0.470
Pipe 8 Std 5S[f1]	10.9	16.3			
			Pipe 1¼ Std 80S	0.596	0.895
Pipe 6 Std 80S	23.8	35.7	Pipe 1¼ Std 40S	0.465	0.700
Pipe 6 Std 40S	16.1	24.3	Pipe 1¼ Std 10S	0.378	0.567
Pipe 6 Std 10S	8.04	12.1	Pipe 1¼ Std 5S	0.236	0.355
Pipe 6 Std 5S	6.63	9.97			
			Pipe 1 Std 80S	0.339	0.510
Pipe 5 Std 80S	14.5	21.7	Pipe 1 Std 40S	0.270	0.406
Pipe 5 Std 40S	10.4	15.6	Pipe 1 Std 10S	0.231	0.347
Pipe 5 Std 10S	5.61	8.44	Pipe 1 Std 5S	0.147	0.220
Pipe 5 Std 5S	4.64	6.97			
Pipe 4 Std 80S	8.39	12.6			
Pipe 4 Std 40S	6.16	9.26			
Pipe 4 Std 10S	3.28	4.94			
Pipe 4 Std 5S	2.31	3.47			
Pipe 3½ Std 80S	6.20	9.31			
Pipe 3½ Std 40S	4.62	6.94			
Pipe 3½ Std 10S	2.58	3.87			
Pipe 3½ Std 5S	1.82	2.73			
Pipe 3 Std 80S	4.42	6.65			
Pipe 3 Std 40S	3.34	5.01			
Pipe 3 Std 10S	1.96	2.94			
Pipe 3 Std 5S	1.38	2.08			
Pipe 2½ Std 80S	2.70	4.05			
Pipe 2½ Std 40S	2.09	3.14			
Pipe 2½ Std 10S	1.31	1.96			
Pipe 2½ Std 5S	0.927	1.39			

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

[f1] Shape exceeds compact limit for flexure with $F_y = 30$ ksi; tabulated values have been adjusted accordingly.

Duplex Stainless Steel

$F_y = 65$ ksi

Table 7-22
Available Flexural Strength, kip-ft
Pipe

PIPE 12–PIPE 1

Shape	M_n/Ω_b ASD	$\phi_b M_n$ LRFD	Shape	M_n/Ω_b ASD	$\phi_b M_n$ LRFD
Pipe 12 Std 40S[f2]	172	259	Pipe 2 Std 80S	3.18	4.78
Pipe 12 Std 10S[f2]	77.2	116	Pipe 2 Std 40S	2.37	3.56
			Pipe 2 Std 10S	1.75	2.63
Pipe 10 Std 40S	123	185	Pipe 2 Std 5S[f2]	1.03	1.54
Pipe 10 Std 10S[f2]	50.8	76.3			
			Pipe 1½ Std 80S	1.81	2.72
Pipe 8 Std 80S	103	154	Pipe 1½ Std 40S	1.39	2.09
Pipe 8 Std 40S	68.8	103	Pipe 1½ Std 10S	1.09	1.64
Pipe 8 Std 10S[f2]	29.4	44.1	Pipe 1½ Std 5S	0.678	1.02
Pipe 8 Std 5S[f2]	21.2	31.8			
			Pipe 1¼ Std 80S	1.29	1.94
Pipe 6 Std 80S	51.5	77.4	Pipe 1¼ Std 40S	1.01	1.52
Pipe 6 Std 40S	35.0	52.5	Pipe 1¼ Std 10S	0.818	1.23
Pipe 6 Std 10S[f2]	15.8	23.8	Pipe 1¼ Std 5S	0.512	0.770
Pipe 6 Std 5S[f2]	12.7	19.1			
			Pipe 1 Std 80S	0.735	1.10
Pipe 5 Std 80S	31.3	47.1	Pipe 1 Std 40S	0.585	0.879
Pipe 5 Std 40S	22.5	33.8	Pipe 1 Std 10S	0.500	0.752
Pipe 5 Std 10S[f2]	11.3	17.1	Pipe 1 Std 5S	0.318	0.477
Pipe 5 Std 5S[f2]	9.10	13.7			
Pipe 4 Std 80S	18.2	27.3			
Pipe 4 Std 40S	13.3	20.1			
Pipe 4 Std 10S[f2]	6.75	10.1			
Pipe 4 Std 5S[f2]	4.50	6.76			
Pipe 3½ Std 80S	13.4	20.2			
Pipe 3½ Std 40S	10.0	15.0			
Pipe 3½ Std 10S	5.59	8.39			
Pipe 3½ Std 5S[f2]	3.59	5.40			
Pipe 3 Std 80S	9.58	14.4			
Pipe 3 Std 40S	7.23	10.9			
Pipe 3 Std 10S	4.24	6.37			
Pipe 3 Std 5S[f2]	2.79	4.19			
Pipe 2½ Std 80S	5.84	8.78			
Pipe 2½ Std 40S	4.53	6.80			
Pipe 2½ Std 10S	2.83	4.25			
Pipe 2½ Std 5S[f2]	1.93	2.90			

ASD	LRFD
$\Omega_b = 1.67$	$\phi_b = 0.90$

[f2] Shape exceeds compact limit for flexure with $F_y = 65$ ksi; tabulated values have been adjusted accordingly.