

Mild Steel Channels, Flats, Angles and Square Bars

Type	Specification	Chemical Composition (Ladle Analysis)			Tensile Properties						Bend Test		
					Yield Stress (MN/m ²)		Tensile Strength (MN/m ²)	Elongation			Bending Angle	Inside radius	Test Piece
		C%	P%	S%	t<16mm	16<t<40mm		t<5mm	5<t<16mm	16<t<50mm			
							Test Pc. No. 5	Test Pc. No. 1A	Test Pc. No. 1A				
Flat Bar	JIS G3101 1976, Class 2 SS 400	-	0.050 max.	0.050 max.	245 min.	235 min.	402 to 510	21% min.	17% min.		180°	1.5t*	No.1
Angle Bar													
Square Bar													

Note: t* = Thickness of flat, angle and square bar

H T V B

Square Bars

Section size	Unit weight M		Side length a		Section area A		Moment of inertia	Radius of gyration	Modulus of section
	mm	kg/m	lb/ft	mm	in	cm ²			
9	0.64	0.43	9	0.354	0.810	0.125	-	-	-
10	0.79	0.53	10	0.394	1.000	0.155	-	-	-
12	1.13	0.76	12	0.472	1.440	0.223	-	-	-
13	1.33	0.83	13	0.512	1.690	0.262	-	-	-
16	2.01	1.351	16	0.630	2.560	0.3988	.0132	0.181	.0415
17	2.27	1.525	17	0.669	2.890	0.4480	.0168	0.193	.0500
18	2.54	1.707	18	0.709	3.240	0.5022	.0209	0.205	.0592
19	2.83	1.902	19	0.748	3.610	0.5596	.0262	0.217	.0696
22	3.80	2.553	22	0.866	4.840	0.7502	.0468	0.252	0.108
23	4.15	2.789	23	0.906	5.290	0.8200	.0560	0.260	0.124
24	4.52	3.037	24	0.945	5.760	0.8928	.0663	0.272	0.140
25	4.91	3.299	25	0.984	6.250	0.9688	.0783	0.283	0.159
26	5.31	3.568	26	1.024	6.760	1.048	.0915	0.295	0.179
28	6.15	4.133	28	1.102	7.840	1.215	.123	0.319	0.223
30	7.07	4.751	30	1.181	9.000	1.395	.162	0.343	0.275
32	8.04	5.403	32	1.260	10.24	1.587	0.210	0.362	0.333
34	9.07	6.095	34	1.339	11.56	1.792	0.267	0.386	0.400
35	9.62	6.464	35	1.378	12.25	1.899	0.300	0.398	0.436
36	10.2	6.854	36	1.417	12.96	2.009	0.336	0.409	0.475
38	11.3	7.593	38	1.496	14.44	2.238	0.418	0.433	0.558
50	19.6	13.17	50	1.969	25.00	3.875	1.252	0.567	1.269
55	23.7	15.93	55	2.165	30.25	4.689	1.833	0.626	1.690
60	28.3	19.02	60	2.362	36.00	5.580	2.595	0.681	2.197
65	33.2	22.31	65	2.559	42.25	6.549	3.580	0.740	2.795
70	38.5	25.87	70	2.756	49.00	7.595	4.805	0.795	3.491
75	44.2	29.70	75	2.953	56.25	8.719	6.342	0.854	4.290
80	50.2	33.73	80	3.150	64.00	9.920	8.192	0.909	5.205
85	56.7	38.10	85	3.346	72.25	11.20	10.450	0.965	6.224
90	63.6	42.74	90	3.543	81.00	12.56	13.141	1.024	7.384
95	70.8	47.58	95	3.740	90.25	13.99	16.312	1.079	8.726
100	78.5	52.75	100	3.937	100.0	15.50	20.012	1.138	10.191
110	95.0	63.84	110	4.331	121.0	18.76	129.309	1.252	13.547
120	113	75.93	120	4.724	144.0	22.32	41.562	1.362	17.575
130	133	86.37	130	5.118	169.0	26.20	57.177	1.476	22.334
140	154	103.5	140	5.512	196.0	30.38	76.877	1.591	27.888
150	177	118.9	150	5.906	255.0	34.88	101.381	1.705	34.295
160	201	135.1	160	6.299	256.0	39.68	131.195	1.819	41.679