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STEEL BAR WEIGHT TABLE

Theoretical weight of steel bars (kg/m) based on specific gravity 7.85 g/cm³. Read the unit weight for each size from the tables below, then multiply it by the length you need.

Round bar and square bar weight

Unit weight for round bar and square bar from 5 to 300 mm, calculated from nominal size at a density of 7.85 g/cm³. Density varies a little by grade, and the measured values are in the tool steel density and thermal expansion chart.

Size (mm)	Round bar (kg/m)	Square bar (kg/m)
5	0.15	0.20
6	0.22	0.28
7	0.30	0.38
8	0.39	0.50
9	0.50	0.64
10	0.62	0.79
11	0.75	0.95
12	0.89	1.13
13	1.04	1.33
14	1.21	1.54
15	1.39	1.77
16	1.58	2.01
17	1.78	2.27
18	2.00	2.54
19	2.23	2.83
20	2.47	3.14
21	2.72	3.46
22	2.98	3.80
23	3.26	4.15
24	3.55	4.52
25	3.85	4.91
26	4.17	5.31
27	4.49	5.72
28	4.83	6.15
29	5.19	6.60
30	5.55	7.07
31	5.92	7.54
32	6.31	8.04
33	6.71	8.55
34	7.13	9.07

Size (mm)	Round bar (kg/m)	Square bar (kg/m)
35	7.55	9.62
36	7.99	10.2
37	8.44	10.8
38	8.90	11.3
39	9.38	11.9
40	9.86	12.6
41	10.4	13.2
42	10.9	13.9
43	11.4	14.5
44	11.9	15.2
45	12.5	15.9
46	13.1	16.6
47	13.6	17.3
48	14.2	18.1
49	14.8	18.9
50	15.4	19.6
51	16.0	20.4
52	16.7	21.2
53	17.3	22.1
54	18.0	22.9
55	18.7	23.8
56	19.3	24.6
57	20.0	25.5
58	20.7	26.4
59	21.5	27.3
60	22.2	28.3
61	22.9	29.2
62	23.7	30.2
63	24.5	31.2
64	25.3	32.2
65	26.1	33.2
66	26.9	34.2
67	27.7	35.2
68	28.5	36.3
69	29.4	37.4
70	30.2	38.5
71	31.1	39.6
72	32.0	40.7
73	32.8	41.8
74	33.8	43.0
75	34.7	44.2
76	35.6	45.3

Size (mm)	Round bar (kg/m)	Square bar (kg/m)
77	36.6	46.5
78	37.5	47.8
79	38.5	49.0
80	39.5	50.2
81	40.5	51.5
82	41.5	52.8
83	42.5	54.1
84	43.5	55.4
85	44.5	56.7
86	45.6	58.1
87	46.7	59.4
88	47.7	60.8
89	48.8	62.2
90	49.9	63.6
91	51.1	65.0
92	52.2	66.4
93	53.3	67.9
94	54.5	69.4
95	55.6	70.9
96	56.8	72.4
97	58.0	73.9
98	59.2	75.4
99	60.4	76.9
100	61.7	78.5
105	68.9	86.6
110	74.6	95.0
115	81.5	104
120	88.8	113
125	96.3	123
130	104	133
135	112	143
140	121	154
145	130	165
150	139	177
155	148	189
160	158	201
165	168	214
170	178	227
175	189	240
180	200	254
185	211	269
190	223	283

Size (mm)	Round bar (kg/m)	Square bar (kg/m)
195	234	299
200	247	314
210	272	346
220	298	380
230	326	415
240	355	452
250	386	491
260	417	531
270	449	572
280	483	615
290	518	660
300	555	707

Hexagonal bar and octagonal bar weight

Hexagonal and octagonal bar from 5 to 56 mm. Size is measured across the flats for both profiles.

Size (mm)	Hexagonal bar (kg/m)	Octagonal bar (kg/m)
5	0.17	0.16
6	0.25	0.23
7	0.33	0.32
8	0.44	0.42
9	0.55	0.53
10	0.68	0.65
11	0.82	0.79
12	0.98	0.94
13	1.15	1.10
14	1.33	1.27
15	1.53	1.46
16	1.74	1.66
17	1.97	1.88
18	2.20	2.11
19	2.45	2.35
20	2.72	2.60
21	3.00	2.87
22	3.29	3.15
23	3.60	3.44
24	3.92	3.74
25	4.25	4.06
26	4.60	4.40
27	4.96	4.74
28	5.33	5.09
29	5.72	5.47

Size (mm)	Hexagonal bar (kg/m)	Octagonal bar (kg/m)
30	6.12	5.85
31	6.53	6.25
32	6.96	6.66
33	7.41	7.08
34	7.86	7.52
35	8.33	7.97
37	9.31	8.90
39	10.3	9.89
41	11.4	10.9
43	12.6	12.0
45	13.8	13.2
47	15.0	14.4
50	17.0	16.3
53	19.1	18.3
56	21.3	20.4

Calculation basis

Specific gravity 7.85 g/cm³, standard for carbon and alloy steel. Round bar 0.00617 × d², square bar 0.00785 × d².

Size definition

Round and square bar, size is the diameter or the side length. Hexagonal and octagonal bar, size is the distance between opposite sides.

Weight adjustment by grade

Molybdenum HSS (M2, M35, M42) approx. +3%, tungsten HSS 18-4-1 type (T1) approx. +10%.

Theoretical unit weights calculated from nominal dimensions at a density of 7.85 g/cm³. Actual weight varies with rolling tolerance, machining allowance and cutting loss, so use the figures for estimating and quotation.
Table values follow Appendix 7, Weight Tables for Steel Bars, in Steel Heat Treatment Handbook, 2nd edition, volume 2 (G. E. Totten, ed.)

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