



CARBON STEEL BARS COLD FINISHED

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GRADE DESCRIPTION

COLD FINISHED CARBON BARS

Cold Finished Bars are produced from Special Bar Quality Hot Rolled Bars by cold drawing, turning or grinding or by a combination of these methods. The cross sectional area of the hot rolled bar is cold reduced, resulting in accurate size, smooth surface, increased mechanical properties and machinability.

1018 is a general purpose low carbon steel with good case hardening qualities. It is especially suited to cold forming and bending operations. Material is suitable for parts which require cold forming (such as crimping, swaging, or bending). For severe bends, however, stress relieving may be necessary to prevent cracking.

1045 is a medium carbon steel used extensively in induction hardening applications. This is not normally considered a screw machine steel and is only fair for brazing and welding. However, it can be forged satisfactorily and is the most common shafting steel in the medium carbon range.

1117 is a low carbon, high manganese steel. Machinability is improved over 1018, and case hardening is deep and uniform, supported by a tough ductile core.

11L17 is a resulphurized steel with good machinability and surface finish. The product is made much the same way as 12L14 where the lead does not alloy with the steel. Lead is retained in its elemental state and is dispersed within the steel's structure allowing chips to break off easier during machining.

1141 is a medium carbon, special quality, manganese steel, with improved machinability and better heat treatment response. Surface hardness is deeper and more uniform than plain carbon steels.

1144 is a resulphurized carbon steel containing manganese and sulphur to provide a free-machining steel. It is recommended especially for high-production automatic machine products and machined parts requiring higher strength and wear resistance than is possible with lower carbon steels.

Stressproof® is a medium carbon free machining steel that has been severely cold reduced to improve its mechanical properties. Its inherent strength, without heat treatment, is comparable to heat treated steels of equal hardness. This permits direct use of many parts following the last machining operation, without the necessity of a further hardening treatment.

12L14 is considered to be one of the fastest machining steels currently produced. This has been achieved through the addition and even dispersal of tiny lead particles throughout the bar. C12L14 gives a smooth, machined surface and because of its low friction component allows increased tool life. This grade is recommended for high-speed automatic screw machine parts.

1215 is one of the most popular screw stocks marketed today. C1215 provides good surface finish and brazing properties.

Fatigueproof® is made by various combinations of mechanical working and thermal treatment which can include Niagara LaSalle's "e.t.d."® (elevated temperature drawing) process. This is a high strength steel bar that eliminates heat treating and secondary operations such as cleaning, straightening, secondary machining and inspections. All this, in combination with free machining and high strength, operates to lower end costs. Fatigueproof® induction hardens satisfactorily, but should be watched for quench cracks. Fatigueproof® is also comparator or roto tested.



Alro delivers...everyday

ROUNDS - COLD FINISHED

STOCK LENGTHS 12'

(Other lengths are available upon request)

Diameter	Weight/Ft	Weight per 12'	Stressproof® A311 Class B**								Fatigueproof®
			1018	1045*	1117	11L17	1141	1144	12L14	1215	
1/8	0.040	.48	X							X	
5/32	0.070	.84	X							X	
3/16	0.090	1.08	X	X						X	X
13/64	0.110	1.32	X							X	
7/32	0.130	1.56	X							X	X
15/64	0.147	1.76	X							X	
1/4	0.167	2.00	X	X	X				X	X	X
17/64	0.190	2.28	X							X	
9/32	0.210	2.52	X							X	X
19/64	0.240	2.88	X							X	
5/16	0.260	3.12	X	X					X	X	X
21/64	0.290	3.48	X							X	
11/32	0.320	3.84	X							X	X
23/64	0.350	4.20	X							X	
3/8	0.380	4.56	X	X	X		X		X	X	X
25/64	0.410	4.92	X							X	
13/32	0.441	5.29	X							X	X
27/64	0.480	5.76	X							X	
7/16	0.510	6.12	X	X	X				X	X	X
29/64	0.550	6.60	X							X	
15/32	0.587	7.04	X							X	X
31/64	0.630	7.56	X							X	
1/2	0.670	8.04	X	X	X	X	X	X	X	X	X
33/64	0.710	8.52	X							X	
17/32	0.754	9.04	X							X	X
35/64	0.798	9.57	X							X	
9/16	0.850	10.20	X	X	X		X		X	X	X
19/32	0.940	11.28	X							X	X
39/64	0.990	11.88	X							X	
5/8	1.040	12.48	X	X	X	X	X	X	X	X	X
41/64	1.100	13.20	X							X	
21/32	1.150	13.80	X							X	X
11/16	1.260	15.12	X	X	X				X	X	X
23/32	1.380	16.56	X							X	X
47/64	1.440	17.28	X							X	
3/4	1.500	18.00	X	X	X	X	X	X	X	X	X
49/64	1.570	18.84	X							X	
25/32	1.630	19.56	X							X	X
13/16	1.760	21.12	X	X	X		X		X	X	X
27/32	1.901	22.81	X							X	X
7/8	2.040	24.48	X	X	X	X	X	X	X	X	X

* 1045 is available in turned, ground and polished condition.

** Stressproof® A311 Class B is available in ground and polished condition starting at 3/8".

Continued on next page ►



ROUNDS - COLD FINISHED

STOCK LENGTHS 12'/20'

(Other lengths are available upon request)

Diameter	Weight/lbft	Weight per 12'	Stressproof® A311 Class B**									Fatigueproof®
			1078	1045*	1117	11L17	1141	1144	12L14	1215		
29/32	2.193	26.31	X							X	X	
15/16	2.350	28.20	X	X	X		X		X	X	X	
31/32	2.506	30.07	X							X	X	
1	2.670	32.04	X	X	X	X	X	X	X	X	X	X
1-1/16	3.014	36.17	X	X	X		X		X	X	X	
1-1/8	3.379	40.55	X	X	X	X	X	X	X	X	X	X
1-3/16	3.770	45.24	X	X	X		X		X	X	X	X
1-1/4	4.170	50.04	X	X	X	X	X	X	X	X	X	X
1-5/16	4.600	55.20	X	X	X	X	X		X	X	X	
1-3/8	5.050	60.60	X	X	X	X	X	X	X	X	X	X
1-7/16	5.520	66.24	X	X	X		X		X	X	X	
1-1/2	6.010	72.12	X	X	X	X	X	X	X	X	X	X
1-9/16	6.510	78.12	X	X	X		X		X	X	X	
1-5/8	7.050	84.60	X	X	X	X	X	X	X	X	X	X
1-11/16	7.600	91.20	X	X					X	X	X	
1-3/4	8.170	98.04	X	X	X	X	X	X	X	X	X	X
1-13/16	8.770	105.24	X	X					X	X	X	
1-7/8	9.390	112.68	X	X	X	X	X	X	X	X	X	X
1-15/16	10.020	120.24	X	X					X	X	X	
2	10.680	128.16	X	X	X	X	X	X	X	X	X	X
2-1/16	11.36	136.32	X						X	X	X	
2-1/8	12.06	144.72	X	X	X	X	X		X	X	X	X
2-3/16	12.78	153.36	X	X					X	X	X	
2-1/4	13.52	162.24	X	X	X	X	X	X	X	X	X	X
2-5/16	14.28	171.36	X	X					X	X	X	
2-3/8	15.06	180.72	X	X	X	X			X	X	X	X
2-7/16	15.87	190.44	X	X					X	X	X	
2-1/2	16.69	200.28	X	X	X	X	X	X	X	X	X	X
2-9/16	17.53	210.36	X						X	X	X	
2-5/8	18.40	220.80	X	X	X	X	X	X	X	X	X	X
2-11/16	19.29	231.48	X	X					X		X	
2-3/4	20.19	242.28	X	X	X	X	X	X	X	X	X	X
2-13/16	21.12	253.44	X								X	
2-7/8	22.07	264.84	X	X	X		X	X	X	X	X	
2-15/16	23.04	276.48	X	X					X		X	
3	24.03	288.36	X	X	X	X	X	X	X	X	X	X

- 1045 is available in ground and polished condition.
- ** Stressproof® A311 Class B is available in ground and polished condition.

Continued on next page ►



ROUNDS - COLD FINISHED

STOCK LENGTHS 12'/20'

(Other lengths are available upon request)

Diameter	Weight/lbft	Weight per 12'														
			1018 (1) (2)	1045 (1) (2) (3)	1117	11L17	1141	1144	Stressproof® A311 Class B(4)	12L14 (2)	1215	Fatigueproof®				
3-1/16	25.05	300.60														
3-1/8	26.08	312.96	X	X	X					X	X	X	X			
3-3/16	27.13	325.54	X													
3-1/4	28.21	338.52	X	X	X			X	X	X	X	X	X			
3-3/8	30.42	365.04	X		X						X	X	X			
3-7/16	31.55	378.60	X	X							X					
3-1/2	32.71	392.49	X	X	X			X	X	X	X	X	X	X		X
3-5/8	35.09	421.08	X		X						X	X	X			
3-11/16	36.31	435.72	X													
3-3/4	37.55	450.36	X	X	X			X	X	X	X	X	X			
3-7/8	40.10	802.00	X								X		X			
3-15/16	41.40	496.80	X	X							X					
4	42.73	512.76	X	X	X			X	X	X	X	X	X			
4-1/8	45.44	545.28	X								X	X				
4-1/4	48.23	578.76	X	X	X						X	X	X	X		
4-3/8	51.11	613.32	X													
4-7/16	52.58	630.91	X	X												
4-1/2	54.07	648.84	X	X	X			X			X	X	X			
4-5/8	57.12	685.44	X													
4-3/4	60.25	723.00	X	X	X							X	X			
4-7/8	63.46	761.52	X													
4-15/16	65.10	781.20	X													
5	66.75	801.12	X	X	X			X	X	X	X	X	X			
5-1/8	70.14	841.68	X													
5-1/4	73.59	883.20	X	X	X							X	X			
5-7/16	78.94	947.28	X													
5-1/2	80.77	969.24	X	X	X							X	X			
5-3/4	88.29	1059.48	X	X	X							X	X			
6	96.13	1153.56	X	X	X							X	X			
6-1/4	104.31	1314.99	X	X												
6-1/2	112.82	1419.63	X	X								X*				
6-3/4	121.68	1528.28	X	X												
7	130.84	1640.92	X	X								X*				
7-1/4	140.36	1757.59	X	X												

- (1) Sizes over 10" are rough turned to +1/8 to 3/16" oversize
- (2) Sizes over 6" are turned and polished. See tolerance chart at end of this section.
- (3) 1045 is available in ground and polished condition.
- (4) Stressproof® A311 Class B is available in ground and polished condition up thru 4".



ROUNDS - COLD FINISHED

STOCK LENGTHS 12'/20'

(Other lengths are available upon request)

Diameter	Weight/lb	Weight per 12'	1018		1117	11L17	1141	1144	Stressproof® A311 Class B**	12L14	1215	Fatigueproof®
			1018	1045*								
7-1/2	150.21	1878.25	X	X						X*		
7-3/4	160.37	2002.92	X	X								
8	170.90	2131.59	X	X						X*		
8-1/2	192.93	2400.96	X	X						X*		
9	216.30	2686.34	X	X						X*		
9-1/2	241.00	2987.74	X	X						X		
10	266.87	3202.42	X	X						X		
10-1/2	302.84	3634.08	X							X		
11	332.29	3987.48	X	X						X		
11-1/2	362.75	4353.00	X									
12	394.54	4734.49	X	X						X		
12-1/2	427.66	5131.92	X	X								
13	462.12	5545.44	X	X								
13-1/2	497.93	5975.16	X	X								
14	535.05	6420.60	X	X								
14-1/2	573.51	6882.12	X	X								
15	613.31	7359.72	X	X								
15-1/2	654.44	7853.28	X									
16	696.91	8362.92	X	X								
16-1/2	740.72	8888.64		X								
	785.85	9430.20	X	X								
18	880.14	10561.68	X	X								
19	979.76	11757.12	X	X								
20	1084.73	13016.76	X	X								
22	1310.67	15728.04	X	X								
24	1557.98	18695.76	X	X								
26	1826.64	21919.68		X								
28	2116.67	25400.04		X								

(1) Sizes over 10" are rough turned to +1/8 to 3/16" oversize

(2) Sizes over 6" thru 10" are turned and polished. See tolerance chart at end of this section.

(3) 1045 is available in ground and polished condition.

(4) Stressproof® A311 Class B is available in ground and polished condition up thru 4".



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CHROME PLATED STEEL BARS

Produced from a commercial grade of cold finished and hot rolled steel bars. After centerless grinding the bars are polished and then hard-chrome plated (usually up to .001"). The bar may be induction hardened to core depth of .050" minimum with a surface hardness of RC50 minimum. Primary application is for shafting in the manufacture of hydraulic cylinders.

Diameter (inches)	Weight (lbs/ft)	1045 75K min. yield/.0005 min. plate	1045/1050 100K min. yield/.0005 min. plate	1045/1050 Induction Hardened 100K min. yield/.001 min. plate
3/8	.375		X	
1/2	.668	X		
5/8	1.043	X		
3/4	1.50	X		
7/8	2.04	X		
1	2.67	X		X
1-1/8	3.38	X		X
1-1/4	4.17	X		X
1-3/8	5.05	X		X
1-1/2	6.01	X		X
1-5/8	7.05	X		
1-3/4	8.18	X		X
2	10.68	X		X
2-1/4	13.52	X		X
2-1/2	16.69	X		X
2-3/4	20.19	X		X
3	24.03	X		X
3-1/4	28.20			X
3-1/2	32.71	X		X
3-3/4	37.55	X		X
4	42.72	X		X
4-1/4	48.23			
4-1/2	54.07	X		
5	66.75	X		



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SQUARES - COLD FINISHED

Size in Inches	Pounds per ft	Pounds per 12 ft	Stock Lengths 12'			
			1018	1045	12L14	1215
1/8	.05	.60	X			
3/16	.12	1.44	X			X
1/4	.21	2.52	X	X	X	X
5/16	.33	3.96	X	X	X	X
3/8	.478	5.73	X	X	X	X
7/16	.65	7.80	X	X	X	X
1/2	.85	10.20	X	X	X	X
9/16	1.08	12.96	X		X	X
5/8	1.328	15.93	X	X	X	X
11/16	1.61	19.32	X		X	
3/4	1.91	22.92	X	X	X	X
13/16	2.24	26.88	X		X	
7/8	2.60	31.20	X	X	X	X
15/16	2.99	35.88	X		X	
1	3.40	40.80	X	X	X	X
1-1/16	3.84	46.08	X		X	
1-1/8	4.30	51.60	X	X	X	X
1-3/16	4.80	57.60	X			
1-1/4	5.31	63.72	X	X	X	X
1-5/16	5.86	70.32	X			
1-3/8	6.43	77.16	X		X	
1-7/16	7.03	84.36				
1-1/2	7.65	91.80	X	X	X	X
1-5/8	8.98	107.76	X		X	
1-3/4	10.413	124.95	X	X	X	X
1-13/16	11.163	133.95	X			
1-7/8	11.95	143.40	X			
2	13.60	163.20	X	X	X	X
2-1/8	15.35	184.20				
2-1/4	17.22	206.64	X	X	X	
2-3/8	19.18	230.16	X			
2-1/2	21.26	255.12	X	X	X	X
2-5/8	23.43	281.16	X			
2-3/4	25.71	308.52	X		X	
3	30.60	367.20	X	X	X	X
3-1/4	35.91	430.92	X			
3-1/2	41.65	499.80	X	X	X	
3-3/4	47.81	573.72	X			
4	54.40	652.80	X	X	X	
4-1/2	68.85	826.20	X			
5	85.04	1020.48	X			
5-1/2	102.80	1233.60	X			
6	122.40	1468.80	X			



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HEXAGONS - COLD FINISHED

Size in Inches	Pounds per ft	Pounds per 12 ft	Stock Lengths 12'					Stress-proof®	Fatigue-proof®
			1018	1045	1117	12L14	1215		
3/16	.10	1.20				X			
1/4	.183	2.19	X			X	X		
5/16	.28	3.36	X			X	X		
3/8	.41	4.92	X			X	X	X	
7/16	.563	6.75	X			X	X	X	
1/2	.73	8.76	X		X	X	X	X	X
9/16	.93	11.16	X		X	X			
5/8	1.15	13.80	X		X	X	X	X	X
11/16	1.39	16.68	X		X	X	X		
3/4	1.66	19.92	X	X	X	X	X	X	X
13/16	1.94	23.28				X	X		
7/8	2.25	27.00	X	X	X	X	X	X	X
15/16	2.59	31.08	X			X	X		
1	2.94	35.28	X	X	X	X	X	X	X
1-1/16	3.32	39.84	X			X	X		
1-1/8	3.721	44.65	X	X	X	X	X	X	
1-3/16	4.15	49.80				X			
1-1/4	4.60	55.20	X	X	X	X	X	X	
1-5/16	5.07	60.84				X			
1-3/8	5.56	66.72	X		X	X	X	X	
1-7/16	6.09	73.08			X				
1-1/2	6.63	79.56	X	X	X	X	X	X	
1-9/16	7.19	86.28				X			
1-5/8	7.78	93.36	X			X	X	X	
1-11/16	8.39	100.68				X			
1-3/4	9.00	108.00	X	X	X	X	X	X	
1-13/16	9.65	115.89				X			
1-7/8	10.35	124.20	X			X	X	X	
2	11.76	141.12	X	X	X	X	X	X	
2-1/8	13.30	159.60							
2-1/4	14.884	178.60	X			X	X		
2-3/8	16.58	198.96	X			X			
2-1/2	18.40	220.80	X			X	X		
2-5/8	20.29	243.48							
2-3/4	22.27	267.24	X			X	X		
2-7/8	24.30	291.60				X			
3	26.50	318.00	X			X	X		
3-1/4	31.10	373.20	X			X			
3-1/2	36.08	432.96	X			X			
3-3/4	41.34	496.08	X			X			
4	47.04	564.48	X			X			



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FLATS - COLD FINISHED

1018 STOCK LENGTHS 12' • 11L17 STOCK LENGTHS 12'

Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)	Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)
1/8 x			3/16 x		
3/16	0.08	0.96	1-1/8	0.72	8.62
1/4	0.11	1.32	1-1/4	0.80	9.60
5/16	0.13	1.56	1-3/8	0.88	10.52
3/8	0.16	1.92	1-1/2	0.96	11.52
7/16	0.19	2.23	1-5/8	1.04	12.48
1/2	0.21	2.52	1-3/4	1.12	13.44
9/16	0.24	2.86	1-7/8	1.20	14.34
5/8	0.27	3.24	2	1.28	15.36
11/16	0.30	3.54	2-1/8	1.36	16.28
3/4	0.32	3.84	2-1/4	1.44	17.20
7/8	0.37	4.46	2-1/2	1.59	19.08
15/16	0.40	4.81	2-3/4	1.76	21.03
1	0.43	5.16	3	1.92	22.92
1-1/8	0.48	5.76	3-1/4	2.07	24.86
1-1/4	0.53	6.36	3-1/2	2.24	26.77
1-1/2	0.64	7.68	3-3/4	2.39	28.68
1-3/4	0.74	8.88	4	2.56	30.60
2	0.85	10.20	4-1/4	2.71	32.52
2-1/4	0.96	11.52	4-1/2	2.88	34.42
2-1/2	1.06	12.75	4-3/4	3.03	36.34
2-3/4	1.17	14.04	5	3.20	38.28
3	1.28	15.36	5-1/2	3.51	42.07
3-1/4	1.38	16.59	6	3.84	45.96
3-1/2	1.49	17.88	7	4.47	53.55
3-3/4	1.59	19.11	8	5.11	61.20
4	1.70	20.40	9	5.74	68.85
4-1/4	1.81	21.66	10	6.38	76.50
4-1/2	1.91	22.92	11	7.01	84.15
4-3/4	2.02	24.24	12	7.65	91.80
5	2.13	25.56	1/4 x		
5-1/2	2.34	28.08	5/16	0.26	3.12
6	2.55	30.60	3/8	0.32	3.84
7	2.98	35.70	7/16	0.37	4.44
8	3.40	40.80	1/2	0.43	5.16
9	3.83	45.90	9/16	0.48	5.76
10	4.25	51.00	5/8	0.53	6.36
11	4.69	56.28	3/4	0.64	7.68
12	5.13	61.56	7/8	0.74	8.88
3/16 x			1	0.85	10.20
1/4	0.16	1.92	1-1/8	0.96	11.52
5/16	0.19	2.28	1-1/4	1.06	12.72
3/8	0.24	2.88	1-3/8	1.17	14.04
7/16	0.28	3.36	1-1/2	1.28	15.36
1/2	0.32	3.84	1-5/8	1.38	16.56
9/16	0.36	4.30	1-3/4	1.49	17.88
5/8	0.40	4.80	1-7/8	1.59	19.08
11/16	0.44	5.28	2	1.70	20.40
3/4	0.48	5.76	2-1/4	1.91	22.92
13/16	0.52	6.24	2-1/2	2.13	25.56
7/8	0.56	6.72	2-3/4	2.34	27.96
15/16	0.64	7.68	3	2.55	30.60
1	0.64	7.68			

*Size available in 1018 & 11L17

** Sizes are stocked in 10ft lengths



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FLATS - COLD FINISHED

1018 STOCK LENGTHS 12' • 11L17 STOCK LENGTHS 12'

Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)	Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)
1/4 x			3/8 x		
3-1/4	2.76	33.12	7/8	1.12	13.44
3-1/2	2.98	35.64	1	1.28	15.36
3-3/4	3.19	38.28	1-1/8	1.43	17.16
4	3.40	40.80	1-1/4	1.59	19.08
4-1/4	3.61	43.32	1-3/8	1.75	21.00
4-1/2	3.83	45.60	1-1/2	1.91	22.95
4-3/4	4.04	48.48	1-5/8	2.07	24.84
5	4.25	51.00	1-3/4	2.23	26.76
5-1/2	4.68	56.16	2	2.55	30.60
6	5.10	61.20	2-1/4	2.87	34.44
6-1/2	5.53	66.36	2-1/2	3.18	38.16
7	5.95	71.40	2-3/4	3.51	42.12
8	6.80	81.60	3	3.82	45.84
9	7.65	91.80	3-1/4*	4.14	49.68
10	8.50	102.00	3-1/2	4.46	53.52
11	9.35	112.20	3-3/4	4.78	57.36
12	10.20	122.40	4	5.10	61.20
14	11.90	142.80	4-1/4	5.42	65.01
16	13.60	163.20	4-1/2	5.70	68.40
5/16 x			4-3/4	6.06	72.67
3/8	0.40	4.80	5	6.38	76.56
7/16	0.47	5.56	5-1/2	7.01	84.12
1/2	0.53	6.36	6	7.65	91.80
5/8	0.66	7.92	6-1/2	8.29	99.48
3/4	0.80	9.60	7	8.93	107.16
7/8	0.93	11.16	8	10.20	122.40
1	1.06	12.72	9	11.48	137.76
1-1/8	1.20	14.34	10	12.75	153.00
1-1/4	1.33	15.96	11	14.03	168.30
1-3/8	1.46	17.52	12	15.30	183.60
1-1/2	1.59	19.08	14	18.00	216.00
1-3/4	1.86	22.32	16	20.40	244.80
2	2.13	25.56	18	22.95	275.40
2-1/4	2.39	28.68	20	25.50	306.00
2-1/2	2.66	31.92	7/16 x		
2-3/4	2.92	35.04	1/2	0.74	8.88
3	3.19	38.28	9/16	0.84	10.08
3-1/2	3.72	44.64	5/8	0.93	11.16
4	4.25	51.00	3/4	1.12	13.44
4-1/2	4.78	57.36	7/8	1.30	15.60
5	5.31	63.72	1	1.49	17.88
6	6.38	76.50	1-1/4	1.86	22.32
7	7.44	89.28	1-1/2	2.23	26.76
8	8.50	102.00	1-3/4	2.60	31.20
10	10.63	127.56	2	2.98	35.76
12	12.75	153.00	2-1/4	3.35	40.20
3/8 x			2-1/2	3.72	44.64
7/16	0.56	6.72	3	4.46	53.52
1/2	0.64	7.68	3-1/2	5.21	62.52
5/8	0.80	9.60	4	5.95	71.40
3/4	0.96	11.52	4-1/2	6.70	80.40
			6	8.93	107.16

*Size available in 1018 & 11L17

** Sizes are stocked in 10ft lengths



FLATS - COLD FINISHED

1018 STOCK LENGTHS 12' • 11L17 STOCK LENGTHS 12'

Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)	Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)
1/2 x			5/8 x		
9/16	0.96	11.52	1*	2.13	25.56
5/8	1.06	12.72	1-1/8	2.39	28.68
3/4	1.28	15.36	1-1/4	2.65	31.80
7/8	1.49	17.88	1-3/8	2.92	35.04
1	1.70	20.40	1-1/2	3.19	38.28
1-1/8	1.91	22.92	1-5/8	3.45	41.40
1-1/4	2.13	25.56	1-3/4	3.72	44.52
1-3/8	2.34	28.08	2*	4.25	51.00
1-1/2*	2.55	30.60	2-1/4	4.78	57.36
1-5/8	2.77	33.24	2-1/2	5.31	63.72
1-3/4	2.98	35.76	2-3/4	5.84	70.08
2	3.40	40.80	3*	6.38	76.56
2-1/8	3.61	43.34	3-1/4	6.90	82.80
2-1/4	3.83	45.96	3-1/2	7.44	89.28
2-1/2*	4.25	51.00	3-3/4	7.96	95.52
2-3/4	4.68	56.16	4	8.50	102.00
3	5.10	61.20	4-1/4	9.03	108.37
3-1/4	5.53	66.36	4-1/2	9.56	114.72
3-1/2	5.95	71.40	4-3/4	10.09	121.08
3-3/4	6.38	76.56	5	10.63	127.56
4	6.80	81.60	5-1/2	11.69	140.16
4-1/4	7.23	86.76	6	12.75	153.00
4-1/2	7.65	91.80	6-1/2	13.81	165.72
4-3/4	8.07	96.84	7	14.88	178.56
5	8.50	102.00	8	17.00	204.00
5-1/2	9.35	112.20	9	19.13	229.44
5-3/4	9.78	117.30	10	21.25	255.00
6	10.20	122.40	11	23.38	280.56
6-1/2	11.05	132.60	12	25.50	306.00
7	11.90	142.80	14	29.75	357.00
8	13.60	163.20			
9	15.30	183.60	3/4 x		
10	17.00	204.00	7/8	2.23	26.76
11	18.70	224.40	1	2.55	30.60
12	20.40	244.80	1-1/8	2.87	34.44
14	23.80	288.00	1-1/4*	3.19	38.16
16	27.20	326.40	1-3/8	3.51	42.12
18	30.60	367.20	1-1/2*	3.83	45.84
20	34.00	408.00	1-5/8	4.14	49.68
			1-3/4	4.46	53.52
9/16 x			2*	5.10	61.20
3/4	1.44	17.16	2-1/4	5.70	68.40
1	1.91	22.92	2-1/2*	6.38	76.56
1-1/4	2.39	28.68	2-3/4	7.01	84.12
1-1/2	2.87	34.44	3*	7.65	91.80
2	3.83	45.96	3-1/4	8.29	99.48
			3-1/2	8.93	107.04
5/8 x			3-3/4	9.56	114.72
3/4	1.59	19.08	4	10.20	122.40
7/8	1.86	22.32	4-1/4	10.84	130.05
			4-1/2*	11.48	137.64

*Size available in 1018 & 11L17

** Sizes are stocked in 10ft lengths

Continued on next page ▶



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FLATS - COLD FINISHED

1018 STOCK LENGTHS 12' • 11L17 STOCK LENGTHS 12'

Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)	Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)
3/4 x			1 x		
4-3/4	12.11	145.32	2-3/4	9.35	112.20
5*	12.75	153.00	3*	10.20	122.40
5-1/2	14.03	168.36	3-1/4	11.05	132.60
6	15.30	183.60	3-1/2	11.90	142.80
6-1/2	16.58	198.96	3-3/4	12.75	153.00
7	17.85	214.20	4*	13.60	163.20
8	20.40	244.80	4-1/4	14.45	173.40
9	22.95	275.40	4-1/2	15.30	183.60
10	25.50	306.00	4-3/4	16.15	193.80
11	28.05	336.60	5	17.00	204.00
12	30.60	367.20	5-1/2	18.70	224.40
14	35.70	428.40	6	20.40	244.80
16	40.80	489.60	6-1/2	22.10	265.20
18	45.90	550.80	7	23.80	285.60
20	51.00	612.00	7-1/2	25.50	306.00
7/8 x			8	27.20	326.40
1	2.98	35.76	9	30.60	367.20
1-1/8	3.35	40.20	10	34.00	408.00
1-1/4*	3.72	44.64	11	37.40	448.80
1-3/8	4.09	49.08	12	40.80	489.60
1-1/2*	4.46	54.24	14	47.60	571.20
1-3/4	5.21	62.52	16	54.40	652.80
2	5.90	70.80	18	61.20	734.40
2-1/4	6.69	80.40	20	68.00	816.00
2-1/2	7.44	89.28	1-1/8 x		
2-3/4	8.18	98.16	1-1/4	4.78	57.36
3	8.93	107.16	1-1/2	5.74	68.88
3-1/2	10.41	124.92	1-3/4	6.69	80.28
4	11.90	142.80	2	7.65	91.80
4-1/2	13.39	160.68	2-1/4	8.61	103.20
5	14.88	178.44	2-1/2	9.56	114.72
6	17.85	214.20	2-3/4	10.52	126.21
6-1/2	19.34	232.05	3	11.48	137.76
7	20.83	249.96	4	15.30	183.60
8	23.80	285.60	4-1/4	16.26	195.07
9	26.78	321.36	5	19.13	229.56
10	29.75	357.00	6	22.95	275.40
12	35.70	428.40	8	30.60	367.20
1 x			1-1/4 x		
1-1/8	3.83	45.96	1-3/8	5.84	70.08
1-1/4*	4.25	51.00	1-1/2*	6.38	77.88
1-3/8	4.68	56.04	1-5/8	6.91	82.92
1-1/2*	5.10	61.20	1-3/4*	7.44	88.80
1-5/8*	5.53	66.36	2*	8.50	102.00
1-3/4*	5.95	71.40	2-1/4	9.58	114.99
1-7/8	6.38	76.56	2-1/2*	10.63	127.56
2*	6.80	81.60	2-3/4	11.69	140.16
2-1/4*	7.65	91.80	3	12.75	153.00
2-1/2*	8.50	102.00	3-1/4	13.81	165.72

*Size available in 1018 & 11L17



FLATS - COLD FINISHED

1018 STOCK LENGTHS 12' • 11L17 STOCK LENGTHS 12'

Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)	Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)
1-1/4 x			1-3/4 x		
3-1/2*	14.88	178.56	2	11.90	142.80
3-3/4	15.94	191.28	2-1/4	13.30	159.60
4*	17.00	204.00	2-1/2*	14.88	178.50
4-1/2	19.13	229.56	2-3/4	16.36	196.80
5	21.25	255.00	3*	17.85	214.80
5-1/2*	23.38	280.56	3-1/4	19.34	232.08
6	25.50	306.00	3-1/2	20.83	249.60
7	29.70	356.40	3-3/4	22.31	267.72
8	34.00	408.00	4	23.80	285.60
9	38.25	459.00	4-1/2	26.78	321.60
10	42.50	510.00	5*	29.75	357.60
11*	46.75	561.00	5-1/2	32.73	392.76
12	51.00	612.00	6	35.70	428.40
14	59.50	714.00	7	41.65	499.80
			8	47.60	571.20
1-3/8 x			10	59.50	714.00
1-1/2	7.01	84.12	12	71.40	856.80
2	9.35	112.20			
3	14.03	168.36	2 x		
1-1/2 x			2-1/4	15.30	183.60
1-5/8	8.29	99.48	2-1/2*	17.00	204.00
1-3/4*	8.93	107.16	2-3/4	18.70	224.40
2*	10.20	122.40	3*	20.40	244.80
2-1/4	11.48	137.76	3-1/4	22.10	265.20
2-1/2*	12.75	153.00	3-1/2*	23.80	285.60
2-3/4	14.03	168.36	3-3/4	25.50	306.00
3*	15.30	183.60	4*	27.20	326.40
3-1/4	16.58	198.96	4-1/2	30.60	367.20
3-1/2*	17.85	214.20	5*	34.00	408.00
4*	20.40	244.80	5-1/2	37.40	448.80
4-1/2*	22.95	275.40	6	40.80	489.60
5*	25.50	306.00	6-1/2	44.20	530.40
5-1/2	28.05	336.60	7	47.60	571.20
6	30.60	367.20	8	54.40	652.80
6-1/2	33.15	397.80	9	61.20	734.40
7	35.70	428.40	10	68.00	816.00
8	40.80	489.60	11**	74.80	897.60
9	45.90	550.80	12	81.60	979.20
10	51.00	612.00	14**	95.20	952.00
11**	56.10	673.20	16**	108.80	1088.00
12	61.20	734.40	20**	136.00	1360.00
14	71.40	856.80			
16	81.60	979.20	2-1/4 x		
20	102.00	1224.00	2-1/2	19.10	229.20
1-5/8 x			2-3/4	21.04	252.48
2	11.05	132.60	3	22.90	274.80
3	16.59	199.08	3-1/4	24.86	298.32
4	22.10	265.20	3-1/2	26.70	320.40
			4	30.60	367.20
			4-1/2	34.40	412.80
			5	38.25	459.00

*Size available in 1018 & 11L17

** Sizes are stocked in 10ft lengths

Continued on next page ►



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FLATS - COLD FINISHED

1018 STOCK LENGTHS 12' • 11L17 STOCK LENGTHS 12'

Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)	Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)
2-1/4 x			3-1/2 x		
6	45.90	550.80	8**	95.20	952.00
8	61.20	734.40	8-1/2**	101.15	1011.50
10	76.50	918.00	9**	107.10	1071.00
12	91.80	1101.60	10**	119.00	1190.00
2-1/2 x			12**	142.80	1428.00
2-3/4	23.38	280.56	14**	166.60	1666.00
3	25.50	306.00	16**	190.40	1904.00
3-1/2	29.75	357.00	20**	238.00	2380.00
4	34.00	408.00	4 x		
4-1/2	38.25	459.00	4-1/2**	61.20	612.00
5	42.50	510.00	5**	68.00	680.00
5-1/2	46.75	561.00	5-1/2**	74.80	748.00
6	51.00	612.00	6**	81.60	816.00
7	59.50	714.00	7**	95.20	952.00
8	68.00	816.00	8**	108.80	1088.00
8-1/2	72.25	722.50	9**	122.40	1224.00
9	76.50	918.00	10**	136.00	1360.00
10	85.00	1020.00	12**	163.20	1632.00
12	102.00	1224.00	14**	190.40	1904.00
14**	119.00	1190.00	16**	217.60	2176.00
16**	136.00	1360.00	20**	272.00	2720.00
20**	170.00	1700.00	4-1/2 x		
2-3/4 x			5**	76.50	765.00
3-1/2**	32.72	327.25	5-1/2**	84.15	841.50
4**	37.40	374.00	6**	91.80	918.00
6**	56.10	561.00	7**	107.10	1071.00
3 x			8**	122.40	1224.00
3-1/2	35.70	428.40	9**	137.70	1377.00
4*	40.80	489.60	10**	153.00	1530.00
4-1/2	45.90	550.80	12**	183.60	1836.00
5	51.00	612.00	14**	214.20	2142.00
5-1/2**	56.10	561.00	16**	244.80	2448.00
6	61.20	734.40	20**	306.00	3060.00
7	71.40	856.80	5 x		
8	81.60	979.20	5-1/2**	93.50	935.00
9**	91.80	918.00	6**	102.00	1020.00
10	102.00	1224.00	7**	119.00	1190.00
12**	122.40	1468.80	8**	136.00	1360.00
14**	142.80	1428.00	9**	153.00	1530.00
16**	163.20	1632.00	10**	170.00	1700.00
20**	204.00	2040.00	12**	204.00	2040.00
3-1/2 x			14**	238.00	2380.00
4**	47.60	476.00	16**	272.00	2720.00
4-1/2**	53.50	535.00	20**	340.00	3400.00
5	59.50	595.00	5-1/2 x		
5-1/2**	65.45	654.50	6**	112.20	1122.00
6**	71.40	714.00			
7**	83.30	833.00			

* Sizes 1" thick and over that are not listed can be cut from plate.

*Size available in 1018 & 11L17

** Sizes are stocked in 10ft lengths

Continued on next page ▶



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FLATS - COLD FINISHED

1018 STOCK LENGTHS 12' • 11L17 STOCK LENGTHS 12'

Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)	Size in Inches	Pounds (per ft.)	Pounds (per 12 ft.)
6 x			6 x		
7**	143.64	1436.40	12**	244.80	2448.00
8**	163.20	1632.00	14**	285.60	2856.00
9**	183.60	1836.00	16**	326.40	3264.00
10**	204.00	2040.00	20**	408.00	4080.00

• Sizes 1" thick and over that are not listed can be cut from plate.

*Size available in 1018 & 11L17

** Sizes are stocked in 10ft lengths

WIDER

Alro delivers...everyday
C1018 Cold Finished Flats
Up to 6" Thick and Up to 20" Wide!

- Large 1018 flats are used in many machine tool, fixture, drilling, milling and tool and die applications.
- Using CF wide flats can provide a significant savings by reducing the need for costly secondary operations.



Visit the Alro Web Site
www.alro.com

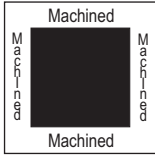




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KPM SUPER SQUARE

KPM Super Square, with its already-squared edges and tighter tolerances, may reduce your purchased weight, many hours of valuable machine time, and increases die build efficiency.

<i>KPM Super Square</i>	
	THICKNESS FINISH Ground or Milled
	THICKNESS TOLERANCE +.015 to +.025
	WIDTH FINISH Ground or Milled
	WIDTH TOLERANCE +.015 to +.025
	LENGTH FINISH Saw Cut
	LENGTH TOLERANCE +.060 to +.187*
	EDGE SQUARENESS .002 TIR
<i>KPM Super Square - Carbon Steel Grades</i>	
1020	
1060	
<i>KPM Super Square - Availability (Flats & Squares)</i>	
Available in most thicknesses and widths. Super Square starts at 1/2" thick and 1-1/2" wide up to 12" wide.	
<i>KPM Super Square - Tolerances</i>	
Thickness: +.015 to +.025	
Width: +.015 to +.025	
Squareness within: .002" TIR	

*Lengths (5-side or 6-side) can be machined to special tolerances if desired.



Visit the Alro Web Site
www.alro.com





COLD FINISHED CARBON STEEL BARS STANDARD MANUFACTURING TOLERANCES UNDERSIZE VARIATION IN INCHES

Size & Shape (inches)	Carbon to .28% Max.	Max. Carbon Over .28% to .55%	*Stressproof®	Max. Carbon Over .55% Or All Carbons Heat Treated	Fatigueproof®
ROUNDS (Cold Drawn or Turned & Polished)					
Up thru 1-1/2	.002	.003	.004	.005	.005
Over 1-1/2 thru 2-1/2	.003	.004	.005	.006	.006
Over 2-1/2 thru 4	.004	.005	.006	.007	.006
Over 4 thru 6	.005	.006	....	.008	
Over 6 thru 8	.006	.007	....	.009	
Over 8 thru 9	.007	.008	....	.010	
Over 9	.008	.009			
HEXAGONS					
Up thru 3/4	.002	.003	.004	.006	
Over 3/4 thru 1-1/2	.003	.004	.005	.007	
Over 1-1/2 thru 2-1/2	.004	.005	.006	.008	
Over 2-1/2 thru 3-1/8	.005	.006	....	.009	
SQUARES					
Up thru 3/4	.002	.004	....	.007	
Over 3/4 thru 1-1/2	.003	.005	....	.008	
Over 1-1/2 thru 2-1/2	.004	.006	....	.009	
Over 2-1/2 thru 3-1/8	.005	.008	....	.011	
FLATS (Width)					
Up thru 3/4	.003	.004	....	.008	
Over 3/4 thru 1-1/2	.004	.005	....	.010	
Over 1-1/2 thru 3	.005	.006	....	.012	
Over 3 thru 4	.006	.008	....	.016	
Over 4 thru 6	.008	.010	....	.020	
Over 6	.013	.015	....	....

* Tolerances for Flats apply to thickness as well as to width and include 16", 18", & 20" wide flats.

* For Cold Drawn, Ground and Polished or Turned, Ground and Polished tolerances for Stressproof®, see below.

* Rough turned 1018 rounds are produced to an oversize tolerance of + 1/8" to 3/16" oversize.

Size & Shape (inches)	Turned, Ground & Polished Includes Stressproof®	Bearing Shaft Quality (all undersize)
ROUNDS		
Up thru 1-1/2	.001	.0005/.0015
Over 1-1/2 thru 2-1/2	.0015	.0005/.002
Over 2-1/2 thru 3	.002	.0005/.0025
Over 3 thru 4	.003	.0005/.0035
Over 4 thru 6	.004*	.0005/.0065
Over 6	.005*	NA

*For nonresulphurized steels (steels specified to maximum sulphur limits under 0.08%) or for steels thermally treated, the tolerance is increased by .001".