

# SECTION 5

## Cold Finished Bars

<b>SECTION 5: Cold Finished Bars.....</b>	<b>57</b>
General Information.....	59-60
Rounds.....	61
Flats.....	62-64
Hexagons.....	65
Squares.....	65



# COLD FINISHED BARS

---

## General Information on Cold Finished

Manufacturing Tolerance  
C1018, ASTM A108

### Chemical Analysis

Carbon	Manganese	Phosphorus	Sulphur
.15/.20	.60/.90	.04 Max.	.05 Max.

**Mechanical Properties** (The following values are average and should be considered as representative of the grade).

Tensile Strength (PSI) Hardness	Yield Strength (PSI)	Elongation in 2"	Reduction of Area	Brinell
58,000 Min.	32,000 Min.	25%	50%	166

### Flats

Size	Tolerance
To 3/4" Incl.	---.003"
Over 3/4" to 1 1/2" Incl.	---.004"
Over 1 1/2" to 3" Incl.	---.005"
Over 3" to 4" Incl.	---.006"
Over 4" to 6" Incl.	---.008"
Over 6"	---.013"

The tolerance on flats applies to thickness as well as width.

### Squares and Hexagons

Size	Tolerance
Up to 3/4" Incl.	---.002"
Over 3/4" to 1 1/2" Incl.	---.003"
Over 1 1/2" to 2 1/2" Incl.	---.004"
Over 2 1/2" to 4" Incl. (sq.)	---.006"
Over 2 1/2" to 3" Incl. (hex.)	---.005"

# COLD FINISHED BARS

---

## Rounds

Size	Undersize Variation*
1 1/2" or Under	---.002"
Over 1 1/2" to 2 1/2" Incl.	---.003"
Over 2 1/2" to 4" Incl.	---.004"
Over 4" to 6" Incl.	---.005"
Over 6" to 6 1/2"	---.006"

\*Max. of carbon range .28% or less

## Turned, Ground and Polished Rounds Cold Drawn, Ground and Polished Rounds

Size Range in Inches	Undersize Variations in Inches	
	Turned, Ground and Polished Rounds	Cold Drawn, Ground and Polished Rounds
1 1/2 and under	.001	.001
Over 1 1/2 to less than 2 1/2	.0015	.0015
2 1/2 to 3, incl.	.002	.002
Over 3 to 4, incl.	.003	.003
Over 4 to 6, incl.	.004	---
Over 6 .005	---	---

# COLD FINISHED BARS

## Cold Finished Rounds

AISI C-1018, C-1144, C-1117, C-1045,  
C-12L14, ASTM A108  
Stock Lengths 12 / 20 Ft.



Size in Inches	A-311 Stress Proof G&P	1045 TG&P	Lbs. Per Ft.	Lbs. Per 20'
1/8			.0417	.83
3/16			.0939	1.88
1/4			.1669	3.34
5/16	X		.2608	5.22
3/8	X		.3755	7.51
7/16	X		.5111	10.22
1/2	X	X	.6676	13.35
9/16	X	X	.8449	16.90
5/8	X	X	1.043	20.86
11/16	X	X	1.262	25.24
3/4	X	X	1.502	30.04
13/16	X	X	1.763	35.26
7/8	X	X	2.045	40.90
15/16	X	X	2.347	46.94
1	X	X	2.670	53.40
1 1/16	X	X	3.015	60.30
1 1/8	X	X	3.380	67.60
1 3/16	X	X	3.766	75.32
1 1/4	X	X	4.173	83.46
1 5/16	X	X	4.600	92.00
1 3/8	X	X	5.049	100.98
1 7/16	X	X	5.518	110.36
1 1/2	X	X	6.008	120.16
1 9/16		X	6.520	130.40
1 5/8	X	X	7.052	141.04
1 11/16	X	X	7.604	152.08
1 3/4	X	X	8.178	163.56
1 15/16	X	X	10.02	200.40
2	X	X	10.68	213.60
2 1/8	X	X	12.06	241.20
2 1/4	X	X	13.52	270.40
2 3/8	X	X	15.06	301.20
2 7/16	X	X	15.87	317.40
2 1/2	X	X	16.69	333.80
2 5/8	X	X	18.40	368.00
2 3/4	X	X	20.19	403.80
2 15/16	X	X	23.04	460.80
3	X	X	24.03	480.60
3 1/4	X	X	28.21	564.20
3 7/16		X	31.55	631.00
3 1/2	X	X	32.71	654.20
3 15/16		X	41.40	828.00
4	X	X	42.73	854.60
4 15/16		X	65.10	1,302.00
5		X	66.76	1,335.20
6		X	96.13	1,922.60

# COLD FINISHED BARS



## Cold Finished Flats

AISI C-1018, ASTM A108

Stock Lengths 12 Ft.

Size in Inches		Lbs. Per Ft.	Lbs. Per 12'
1/8	x 3/8	.1594	1.913
	x 1/2	.2125	2.550
	x 5/8	.2656	3.187
	x 3/4	.3188	3.826
	x 1	.4250	5.100
	x 1 1/2	.6375	7.650
	x 2	.8500	10.200
	x 3	1.2750	15.300
	x 4	1.7000	20.400
3/16	x 5	2.1250	25.500
	x 6	2.5500	30.600
	x 3/8	.2391	2.869
	x 1/2	.3188	3.826
	x 3/4	.4781	5.737
	x 1	.6375	7.650
1/4	x 1 1/4	.7969	9.563
	x 1 3/8	.8766	10.519
	x 1 1/2	.9563	11.476
	x 2	1.2750	15.300
	x 2 1/2	1.5940	19.128
	x 3	1.9130	22.956
	x 4	2.5500	30.600
	x 5	3.1875	38.250
	x 6	3.8250	45.900
1/4	x 1/2	.4250	5.100
	x 3/4	.6375	7.650
	x 1	.8500	10.200
	x 1 1/4	1.063	12.756
	x 1 1/2	1.275	15.300
	x 2	1.700	20.400
	x 2 1/2	2.125	25.500
	x 3	2.550	30.600
	x 4	3.400	40.800
	x 5	4.250	51.000
	x 6	5.100	61.200
5/16	x 8	6.800	81.600
	x 1/2	.531	6.376
	x 3/4	.7969	9.563
	x 1	1.062	12.744
3/8	x 2	2.124	25.488
	x 3	3.186	38.232
	x 4	4.248	50.976
	x 1/2	.6375	7.650
3/8	x 1	1.275	15.30
	x 1 1/4	1.594	19.13

# COLD FINISHED BARS



## Cold Finished Flats (con't)

AISI C-1018, ASTM A108

Stock Lengths 12 Ft.

Size in Inches	Lbs. Per Ft.	Lbs. Per 12'
x 1 1/2	1.913	22.96
x 2	2.550	30.60
x 3	3.825	45.90
x 4	5.100	61.20
x 5	6.375	76.50
x 6	7.650	91.80
x 7	8.925	107.10
x 8	10.200	122.40
x 9	11.480	137.80
1/2 x 10	12.750	153.00
x 5/8	1.063	12.76
x 3/4	1.275	15.30
x 1	1.700	20.40
x 1 1/4	2.125	25.50
x 1 1/2	2.550	30.60
x 2	3.400	40.80
x 2 1/2	4.250	51.00
x 3	5.100	61.20
x 4	6.800	81.60
x 5	8.500	102.00
x 6	10.200	122.40
x 8	13.600	163.20
x 9	15.300	183.60
x 10	17.000	204.00
x 11	18.700	224.40
x 12	20.400	244.80
5/8 x 3/4	1.594	19.13
x 1	2.125	25.50
x 2	4.250	51.00
x 3	6.375	76.50
x 4	8.500	102.00
x 5	10.630	127.60
x 6	12.750	153.00
3/4 x 1	2.550	30.60
x 1 1/4	3.188	38.26
x 1 1/2	3.825	45.90
x 2	5.100	61.20
x 2 1/2	6.375	76.50
x 3	7.650	91.80
x 4	10.200	122.40
x 5	12.750	153.00
x 6	15.300	183.60
x 7	17.850	214.20
x 8	20.400	244.80
x 9	22.950	275.40

# COLD FINISHED BARS

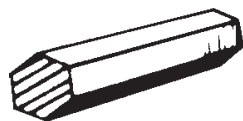
## Cold Finished Flats (con't)

Size in Inches		Lbs. Per Ft.	Lbs. Per 12'
	x 10	25.50	306.0
	x 11	28.05	336.6
1	x 12	30.60	369.2
	x 1 1/4	4.250	51.00
	x 1 1/2	5.100	61.20
	x 2	6.800	81.60
	x 2 1/2	8.500	102.00
	x 3	10.200	122.40
	x 4	13.600	163.20
	x 4 1/2	15.300	183.60
	x 5	17.000	204.00
	x 6	20.400	244.80
	x 8	27.200	326.40
	x 9	30.600	367.20
	x 10	34.000	408.00
	x 11	37.400	448.80
	x 12	40.800	489.60
1 1/4	x 2	8.500	102.00
	x 3	12.750	153.00
	x 4	17.000	204.00
	x 5	21.250	255.00
	x 6	25.500	306.00
1 1/2	x 2	10.200	122.40
	x 3	15.300	183.60
	x 4	20.400	244.80
	x 5	25.500	306.70
	x 6	30.600	367.20
	x 7	35.000	428.40
	x 8	40.800	489.60
2	x 2 1/2	17.00	204.0
	x 3	20.40	244.8
	x 4	27.20	326.4
	x 6	40.80	489.6
	x 8	54.40	652.8
2 1/2	x 3	25.500	306.00
	x 4	34.000	408.00
3	x 4	40.800	489.60



# COLD FINISHED BARS

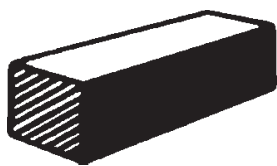
---



## Cold Finished Hexagons

MBQ, Stock Lengths 12 Ft.

Size in Inches	Lbs. Per Ft.	Lbs. Per 12'
5/8	1.150	13.80
11/16	1.392	16.70
3/4	1.656	19.87
1	2.944	35.33
1 1/4	4.601	55.21
2	11.780	141.36



## Cold Finished Squares

AISI C-1018, ASTM A108

Stock Lengths 12 Ft.

Size in Inches	Lbs. Per Ft.	Lbs. Per 12'
1/8	.0531	.637
3/16	.1195	1.434
1/4	.2125	2.550
5/16	.3320	3.984
3/8	.4781	5.737
7/16	.6508	7.810
1/2	.8500	10.20
9/16	1.076	12.91
5/8	1.328	15.94
11/16	1.607	19.28
3/4	1.913	22.96
7/8	2.603	31.24
1	3.400	40.80
1 1/8	4.303	51.64
1 1/4	5.313	63.76
1 1/2	7.650	91.80
1 3/4	10.41	124.9
2	13.60	163.2
3	30.60	367.2
3 1/2	41.65	499.8
4	54.40	652.8
5	85.00	1020.0
6	122.40	1468.8