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 Galvanizing - Stainless Steel
 Aluminum - Alloy Bars

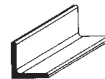
Plate shearing to 3/4 inch
 Rebar fabrication - Brake press
 Cut-to-length - Decoiling

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 an approximate lead time
 of one week.**

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ANGLES - Bar Size

Conforms to ASTM -A36

Size in Inches	Stock Lengths 20' - Some 40'	Weight Per Foot Lbs.	Estimate 20' Bar
1/2 x 1/2 x 1/8	.....	.38.....	7.60
5/8 x 5/8 x 1/8	.....	.48.....	9.60
3/4 x 3/4 x 1/8	.....	.59.....	11.80
7/8 x 7/8 x 1/8	.....	.70.....	14.00
1 x 5/8 x 1/8	.....	.64.....	12.80
1 x 3/4 x 1/8	.....	.70.....	14.00
1 x 1x1/8	.....	.80.....	16.00
	3/16	1.16.....	23.20
	1/4	1.49.....	29.80
1-1/4 x 1-1/4 x 1/8	.....	1.01.....	20.20
	3/16	1.48.....	29.60
	1/4	1.92.....	38.40
1-3/8 x 7/8 x 1/8	.....	.91.....	18.20
	3/16	1.32.....	26.40
1-1/2 x 1-1/4 x 3/16	.....	1.64.....	32.80
1-1/2 x 1-1/2 x 1/8	.....	1.23.....	24.60
	3/16	1.80.....	36.00
	1/4	2.34.....	46.80
	3/8	3.35.....	67.00
1-3/4 x 1-1/4 x 1/8	.....	1.23.....	24.60
	3/16	1.80.....	36.00
	1/4	2.34.....	46.80
1-3/4 x 1-3/4 x 1/8	.....	1.44.....	28.80
	3/16	2.12.....	42.40
	1/4	2.77.....	55.40
2 x 1-1/4 x 3/16	.....	1.96.....	39.20
	1/4	2.55.....	51.00
2 x 1-1/2 x 1/8	.....	1.44.....	28.80
	3/16	2.12.....	42.40
	1/4	2.77.....	55.40
2 x 2 x 1/8	.....	1.65.....	33.00
	3/16	2.44.....	48.80
	1/4	3.19.....	63.80
	5/16	3.92.....	78.40
	3/8	4.70.....	94.00
2-1/2 x 1-1/2 x 3/16	.....	2.44.....	48.80
	1/4	3.19.....	63.80
2-1/2 x 2 x 3/16	.....	2.75.....	55.00
	1/4	3.62.....	72.40
	5/16	4.50.....	90.00
	3/8	5.30.....	106.00
2-1/2 x 2-1/2 x 3/16	.....	3.07.....	61.40
	1/4	4.10.....	82.00
	5/16	5.00.....	100.00
	3/8	5.90.....	118.00
	1/2	7.70.....	154.00

ANGLES - Structural

Conforms to ASTM -A36

Size in Inches	Stock Lengths 20' - Some 40'	Estimate	
		Wt./Ft.	20' Bar
3 x 2 x 3/16		3.07	61.40
1/4		4.10	82.00
5/16		5.00	100.00
3/8		5.90	118.00
1/2		7.70	154.00
3 x 2-1/2 x 1/4		4.50	90.00
5/16		5.60	112.00
3/8		6.60	132.00
3 x 3 x 3/16		3.71	74.20
1/4		4.90	98.00
5/16		6.10	122.00
3/8		7.20	144.00
1/2		9.40	188.00
3-1/2 x 2-1/2 x 1/4		4.90	98.00
3/8		7.20	144.00
5/16		6.10	122.00
1/2		9.40	188.00
3-1/2 x 3 x 1/4		5.40	108.00
5/16		6.60	132.00
3/8		7.90	158.00
1/2		10.20	204.00
3-1/2 x 3-1/2 x 1/4		5.80	116.00
5/16		7.20	144.00
3/8		8.50	170.00
1/2		11.10	222.00
4 x 3 x 1/4		5.80	116.00
5/16		7.20	144.00
3/8		8.50	170.00
1/2		11.10	222.00
4 x 3-1/2 x 1/4		6.20	124.00
5/16		7.70	154.00
3/8		9.10	182.00
1/2		11.90	238.00
4 x 4 x 1/4		6.60	132.00
5/16		8.20	164.00
3/8		9.80	196.00
1/2		12.80	256.00
5/8		15.70	314.00
3/4		18.50	370.00
5 x 3 x 1/4		6.60	132.00
5/16		8.20	164.00
3/8		9.80	196.00
1/2		12.80	256.00

ANGLES - Structural (cont.)

Conforms to ASTM -A36

Size in Inches	Stock Lengths 20' - Some 40'	Estimate	
		Wt./Ft.	20' Bar
5 x 3-1/2 x 1/4		7.00	140.00
5/16		8.70	174.00
3/8		10.40	208.00
1/2		13.60	272.00
5 x 5 x 5/16		10.30	206.00
3/8		12.30	246.00
1/2		16.20	324.00
5/8		20.00	400.00
6 x 3-1/2 x 5/16		9.80	196.00
3/8		11.70	234.00
1/2		15.30	306.00
6 x 4 x 5/16		10.30	206.00
3/8		12.30	246.00
1/2		16.20	324.00
3/4		23.60	472.00
6 x 6 x 3/8		14.90	298.00
1/2		19.60	392.00
5/8		24.20	484.00
3/4		28.70	574.00
1		37.40	748.00
7 x 4 x 3/8		13.60	272.00
1/2		17.90	358.00
8 x 4 x 1/2		19.60	392.00
3/4		28.70	574.00
8 x 6 x 1/2		23.00	460.00
3/4		33.80	676.00
8 x 8 x 1/2		26.40	528.00
3/4		38.90	778.00

FORMED ANGLES

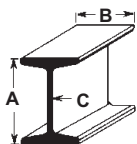
Produced from hot roll
sheets

	Wt. Ea.
2 x 2 x 1/8 x 10'	16.7
2-1/2 x 2-1/2 x 1/8 x 10'	22
3 x 2 x 1/8 x 10'	22
3 x 3 x 1/8 x 10'	25
4 x 2 x 1/8 x 10'	25

GALVANIZED ANGLES

Conforms to ASTM -A36

Size in Inches	Weight per Foot	Estimate 20' Bar
1-1/2 x 1-1/2 x 3/16	1.944	38.88
1-1/2 x 1-1/2 x 1/4	2.527	50.54
2 x 2 x 3/16	2.635	52.70
2 x 2 x 1/4	3.445	68.90
2-1/2 x 2-1/2 x 1/4	4.430	88.60
3 x 3 x 1/4	5.292	105.84



STANDARD I-BEAMS

20' & 40' Stock Lengths

Conforms to ASTM -A36

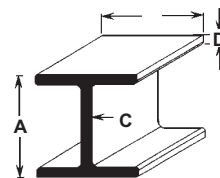
DESIGNATION Depth/Inches x /Wt./Ft./Lbs.	A Depth/Inches	C WEB Thickness in inches	B Flange in Inches		Area Sq. In.
			Width	Thickness	
S 3 x . . . 5.7	.170	2.330	0.260	1.67	
7.5	.349	2.509	0.260	2.21	
S 4 x . . . 7.7	.193	2.663	0.293	2.26	
9.5	.326	2.796	0.293	2.79	
S 5 x . . . 10.0	.214	3.004	0.326	2.94	
S 6 x . . . 12.5	.232	3.332	0.359	3.67	
17.25	.465	3.565	0.359	5.07	
S 7 x . . . 15.3	.252	3.662	0.392	4.50	
S 8 x . . . 18.4	.271	4.001	0.425	5.41	
23.0	.441	4.171	0.425	6.77	
S 10 x . . 25.4	.311	4.661	0.491	7.46	
35.0	.594	4.944	0.491	10.30	
S 12 x . . 31.8	.350	5.000	0.544	9.35	

JR BEAMS

Conforms to ASTM -A36

M 3 x . . . 2.9	.090	2.250	.130	.853
M 4 x . . . 3.2	.092	2.250	.130	.940
M 6 x . . . 4.4	6.00	1.844	.171	.114

**WIDE FLANGE
BEAMS
ASTM A-36**



STOCK LENGTHS

Size 12" and Smaller 20', 40', and 60'
We Cut To Length

Nominal Size	Weight Per Ft. Lb	A Depth in Inches	B Width Inches	D Flange Thickness Inches	C Web Thickness Inches
W 4 x . . .	13.0	4.16	4.060	.345	.280
W 5 x . . .	16.0	5.01	5.000	.360	.240
	19.0	5.15	5.030	.430	.270
W 6 x . . .	9.0	5.90	3.940	.215	.170
	12.0	6.03	4.000	.280	.230
	15.0	5.90	5.990	.260	.230
	16.0	6.28	4.030	.405	.260
	20.0	6.20	6.020	.365	.260
	25.0	6.38	6.080	.455	.320
W 8 x . . .	10.0	7.89	3.940	.205	.170
	13.0	7.99	4.000	.255	.230
	15.0	8.11	4.015	.315	.245
	18.0	8.14	5.250	.330	.230
	21.0	8.28	5.270	.400	.250
	24.0	7.93	6.495	.400	.245
	28.0	8.06	6.535	.465	.285
	31.0	8.00	7.995	.435	.285
	35.0	8.12	8.020	.495	.310
	40.0	8.25	8.070	.560	.360
	48.0	8.50	8.110	.685	.400
W10 x . .	12.0	9.87	3.960	.210	.190
	15.0	9.99	4.000	.270	.230
	17.0	10.11	4.010	.330	.240
	19.0	10.24	4.020	.395	.250
	22.0	10.17	5.750	.360	.240
	26.0	10.33	5.770	.440	.260
	30.0	10.47	5.810	.510	.300
	33.0	9.73	7.960	.435	.290

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WIDE FLANGE BEAMS

Conforms to ASTM A-36

STOCK LENGTHS

Size 12" and Smaller 20', 40', and 60'

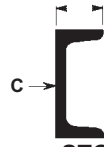
We Cut To Length

Nominal Size	Weight Per Ft. Lb	A Depth in Inches	B Width Inches	D Flange Thickness Inches	C Web Thickness Inches
W10 x . .	39.0	9.92	7.986	.513	.315
	45.0	10.10	8.020	.620	.350
	49.0	9.98	10.000	.560	.340
W12 x . .	14.0	11.91	3.970	.225	.200
	16.0	11.99	3.990	.265	.220
	19.0	12.16	4.005	.350	.235
	22.0	12.31	4.030	.425	.260
	26.0	12.22	6.490	.380	.230
	30.0	12.34	6.520	.440	.260
	35.0	12.50	6.560	.520	.300
	40.0	11.94	8.005	.515	.295
W14 x . .	45.0	12.06	8.045	.575	.335
	50.0	12.19	8.080	.640	.370
	22.0	13.74	5.000	.335	.230
	26.0	13.91	5.025	.420	.255
	30.0	13.84	6.730	.385	.270
	34.0	13.98	6.745	.455	.285
	38.0	14.10	6.770	.515	.310
	43.0	13.66	7.995	.305	.530
W16 x . .	48.0	13.79	8.030	.595	.340
	61.0	13.89	9.995	.645	.375
	26.0	15.69	5.500	.345	.250
	31.0	15.88	5.525	.440	.275
	36.0	15.88	6.985	.430	.295
	40.0	16.01	6.995	.505	.305
W18 x . .	45.0	16.13	7.035	.565	.345
	50.0	16.26	7.070	.630	.380
	35.0	17.70	6.000	.425	.300
	40.0	17.90	6.015	.525	.315
	46.0	18.06	6.060	.605	.360
W24 x . .	50.0	17.99	7.495	.570	.355
	68.0	23.73	8.965	.585	.415

Larger Sizes Available by Order

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**C CHANNELS
(Structural)**

Conforms to ASTM-A36

STOCK LENGTHS: 20', 40', some 50'

D Designation Depth of Channel & Wt. Per Foot in Lbs.	T Web Thickness in Inches	W Flange Width in Inches	Weight Per 20'
C 3" x ...	3.5	1.350	70
	4.1	1.410	82
	5.0	1.498	100
	6.0	1.596	120
C 4" x ...	4.5	1.520	90
	5.4	1.584	108
	7.25	1.721	145
C 5" x ...	6.7	1.750	134
	9.0	1.885	180
C 6" x ...	8.2	1.920	164
	10.5	2.034	210
	13.0	2.157	260
C 7" x ...	9.8	2.090	196
	12.25	2.194	245
	14.75	2.299	295
C 8" x ...	8.5	1.874	170
	11.5	2.260	230
	13.75	2.343	275
	18.75	2.527	375
C 9" x ...	13.4	2.433	268
	C 10" x ..	8.4	1.500	168
15.3		2.600	306
20.0		2.739	400
25.0		2.886	500
C 12" x ..	30.0	3.033	600
	10.6	1.500	212
	20.7	2.942	414
	25.0	3.047	500
	30.0	3.170	600
C 15" x ..	33.9	3.400	678
	50.0	3.716	1000

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BAR CHANNELS H.R. - 20'

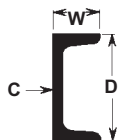
Conforms to ASTM-A36

Size Inches	Wt. Lbs. Per Ft.	Wt. Per Length
3/4 x 3/8 x 1/8	.56	11.2
1 x 1/2 x 1/8	.84	16.8
1-1/4 x 1/2 x 1/8	.99	19.8
1-1/2 x 1/2 x 1/8	1.12	22.4
1-1/2 x 9/16 x 3/16	1.45	29.0
1-1/2 x 3/4 x 1/8	1.17	23.4
2 x 1/2 x 1/8	1.43	28.6
2 x 9/16 x 3/16	1.86	37.2
2 x 5/8 x 1/4	2.28	45.6
2 x 1 x 1/8	1.59	31.8
2 x 1 x 3/16	2.32	46.4
2-1/2 x 5/8 x 3/16	2.27	45.4

MC CHANNELS

(Ship & Car)

Conforms to ASTM A36



D Designation Depth of Channel & Wt. Per Foot in Lbs.	T Web Thickness in Inches	W Flange Width in Inches	Weight 20' Pc.
MC 3 ... 7.1 ...	.312	1.938	142
MC 4 ... 13.8 ...	.500	2.500	276
MC 6 ... 12.0 ...	.310	2.497	240
	15.3 ...	.340	306
	16.3 ...	.375	326
MC 8 ... 18.7 ...	.353	2.978	374
	20.0 ...	.400	400
	22.8 ...	.427	456

TEE BARS - 20'

Size Inches	Wt. Lbs. Per Ft.	20' Bar
1 x 1 x 1/8	0.850	17.00
1-1/2 x 1-1/2 x 3/16	1.900	38.00
2 x 2 x 1/4	3.620	72.40
2-1/2 x 2-1/2 x 1/4	4.600	92.00

FLATS H.R. - 20'

Conforms to ASTM A569 or A-36

Size	Wt./Ft.	Wt./20'
1/8 x		
1/2	0.213	4.26
5/8	0.266	5.32
3/4	0.319	6.38
7/8	0.372	7.44
1	0.425	8.50
1-1/4	0.531	10.62
1-1/2	0.638	12.76
1-3/4	0.744	14.88
2	0.850	17.00
2-1/4	0.956	19.12
2-1/2	1.063	21.26
2-3/4	1.151	23.03
3	1.275	25.50
3-1/2	1.488	29.76
4	1.700	34.00
4-1/2	1.913	38.25
5	2.125	42.50
5-1/2	2.338	46.76
6	2.550	51.00

3/16 x

1/2	0.319	6.38
5/8	0.398	7.96
3/4	0.478	9.56
7/8	0.558	11.16
1	0.638	12.76
1-1/8	0.71	14.34
1-1/4	0.797	15.94
1-1/2	0.956	19.12
1-3/4	1.116	22.32
2	1.275	25.50
2-1/4	1.434	28.68
2-1/2	1.594	31.88
2-3/4	1.753	35.06
3	1.913	38.26
3-1/4	2.072	41.44
3-1/2	2.231	44.62
4	2.550	51.00
4-1/2	2.869	57.38
5	3.188	63.76
5-1/2	3.507	70.14
6	3.825	76.50
8	5.100	102.00

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FLATS H.R. - 20' (cont.)

Conforms to ASTM -A36

Size Inches	Weight Per Ft. Lbs.	Wt. of 20' Bar
<u>1/4 x</u>		
1/2	0.425	8.50
5/8	0.531	10.62
3/4	0.638	12.76
1	0.850	17.00
1-1/4	1.063	21.26
1-3/8	1.169	23.38
1-1/2	1.275	25.50
1-5/8	1.380	27.60
1-3/4	1.488	29.76
2	1.700	34.00
2-1/4	1.913	38.26
2-1/2	2.125	42.50
2-3/4	2.338	46.76
3	2.550	51.00
3-1/4	2.760	55.20
3-1/2	2.975	59.50
3-3/4	3.190	63.80
4	3.400	68.00
4-1/4	3.612	72.24
4-1/2	3.825	76.50
5	4.250	85.00
5-1/2	4.675	93.50
6	5.100	102.00
7	5.950	119.00
8	6.800	136.00
9	7.650	153.00
10	8.500	170.00
11	9.350	187.00
12	10.200	204.00

5/16 x

1/2	0.531	10.62
5/8	0.664	13.29
3/4	0.797	15.94
1	1.063	21.26
1-1/4	1.328	26.56
1-1/2	1.594	31.88
1-3/4	1.859	37.18
2	2.125	42.50
2-1/4	2.391	47.82
2-1/2	2.656	53.12
3	3.188	63.76
3-1/2	3.719	74.38
4	4.250	85.00
4-1/2	4.781	95.62
5	5.313	106.26
6	6.375	127.50

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FLATS H.R. - 20' (cont.)

Conforms to ASTM -A36

Size Inches	Weight Per Ft. Lbs.	Wt. of 20' Bar
<u>3/8 x</u>		
1/2	0.638	12.76
3/4	0.956	19.12
1	1.275	25.50
1-1/8	1.436	28.72
1-1/4	1.594	31.88
1-3/8	1.756	35.10
1-1/2	1.913	38.26
1-5/8	2.070	41.40
1-3/4	2.231	44.62
2	2.550	51.00
2-1/4	2.869	57.38
2-1/2	3.188	63.76
2-3/4	3.506	70.12
3	3.825	76.50
3-1/4	4.144	83.70
3-1/2	4.463	89.26
4	5.100	102.00
4-1/2	5.738	114.76
5	6.375	127.50
5-1/2	7.013	140.26
6	7.650	153.00
6-1/2	8.296	165.90
7	8.930	178.60
8	10.200	204.00
9	11.479	229.60
10	12.750	255.00
12	15.300	306.00

1/2 x

3/4	1.275	25.50
1	1.700	34.00
1-1/8	1.910	38.20
1-1/4	2.125	42.50
1-1/2	2.550	51.00
1-3/4	2.975	59.50
2	3.400	68.00
2-1/4	3.825	76.50
2-1/2	4.250	85.00
2-3/4	4.675	93.50
3	5.100	102.00
3-1/4	5.525	110.50
3-1/2	5.950	119.00
4	6.800	136.00
4-1/2	7.650	153.00
5	8.500	170.00
5-1/2	9.350	187.00

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FLATS H.R. - 20' (cont.)

Conforms to ASTM -A36

Size Inches	Weight Per Ft. Lbs.	Wt. of 20' Bar
<u>1/2 x (cont.)</u>		
6	10.200	204.00
7	11.900	238.00
8	13.600	272.00
9	15.300	306.00
10	17.000	340.00
11	18.699	374.00
12	20.400	408.00
<u>5/8 x</u>		
3/4	1.590	31.80
1	2.125	42.50
1-1/4	2.656	53.12
1-1/2	3.188	63.76
1-3/4	3.719	74.38
2	4.250	85.00
2-1/2	5.313	106.26
2-3/4	5.840	116.80
3	6.375	127.50
3-1/2	7.438	148.76
4	8.500	170.00
4-1/2	9.563	191.26
5	10.625	212.50
6	12.750	255.00
7	14.875	297.50
8	17.000	340.00
9	19.129	382.58
10	21.250	425.00
12	25.500	510.00
<u>3/4 x</u>		
1	2.550	51.00
1-1/4	3.188	63.76
1-1/2	3.825	76.50
1-3/4	4.463	88.26
2	5.100	102.00
2-1/4	5.743	114.86
2-1/2	6.375	127.50
2-3/4	7.018	140.36
3	7.650	153.00
3-1/2	8.925	178.50
4	10.200	204.00
4-1/2	11.475	229.50
5	12.750	255.00
6	15.300	306.00
7	17.850	357.00
8	20.400	408.00
9	22.700	454.00
10	25.500	510.00
12	30.600	612.00

State Line Supply Co.

FLATS H.R. - 20' (cont.)

Conforms to ASTM -A36

Size Inches	Weight Per Ft. Lbs.	Wt. of 20' Bar
<u>1 x</u>		
1-1/4	4.250	85.00
1-1/2	5.100	102.00
1-3/4	5.950	119.00
2	6.800	136.00
2-1/2	8.500	170.00
2-3/4	9.350	187.00
3	10.200	204.00
3-1/2	11.900	238.00
4	13.600	272.00
4-1/2	15.300	306.00
5	17.000	340.00
5-1/2	18.699	373.98
6	20.400	408.00
7	23.800	476.00
8	27.200	544.00
9	30.600	612.00
10	34.000	680.00
12	40.800	816.00
<u>1-1/4 x</u>		
2	8.500	170.00
2-1/2	10.625	212.50
3	12.750	255.00
3-1/2	14.889	297.80
4	17.000	340.00
5	21.249	425.00
6	25.500	510.00
7	29.750	595.00
8	34.000	680.00
<u>1- 3/4 x</u>		
3	17.870	357.40
<u>1-1/2 x</u>		
2	10.200	204.00
2-1/2	12.750	255.00
3	15.300	306.00
3-1/2	17.850	357.00
4	20.400	408.00
5	25.500	510.00
6	30.600	612.00
<u>2 x</u>		
2-1/2	17.000	340.00
3	20.400	408.00
4	27.200	544.00
4-1/2	30.600	612.00
5	34.000	680.00
6	40.800	816.00

SQUARES H.R. - 20

Conforms to ASTM -A36

Size Inches	Weight Per Ft. Lbs.	Wt. of 20' Bar
3/8	0.478	9.56
1/2	0.850	17.00
5/8	1.330	26.60
3/4	1.910	38.20
7/8	2.600	52.00
1	3.400	68.00
1-1/8	4.300	86.00
1-1/4	5.310	106.20
1-1/2	7.650	153.00
2	13.600	272.00
2-1/4	17.430	348.50
2-1/2	21.250	425.00

ROUNDS H.R. - 20



7/16 & under low carbon uncertified
1/2 & over conforms to ASTM -A36

Size Inches	Weight Per Ft. Lbs.	Wt. of 20' Bar
3/16	0.094	1.88
1/4	0.167	3.34
5/16	0.261	5.22
3/8	0.376	7.52
7/16	0.511	10.22
1/2	0.668	13.36
9/16	0.845	16.90
5/8	1.040	20.80
11/16	1.260	25.20
3/4	1.500	30.00
7/8	2.040	40.80
1	2.670	53.40
1-1/8	3.380	67.60
1-1/4	4.170	83.40
1-3/8	5.050	101.00
1-1/2	6.010	120.20
1-3/4	8.180	163.60
2	10.680	213.60
2-1/4	13.520	270.40
2-1/2	16.690	333.80
3	24.030	480.60

Most hot finished items can be ordered pickled and oiled or galvanized upon request with a turn around of approximately 7 to 10 days.

Cold Finished Carbon Steel Bars

Cold finished bars are produced by cold drawing oversized hot rolled bars (that have been cleaned to remove scale) through dies to the required size. This process gives cold finished bars a clean surface finish with tighter tolerances and higher mechanical properties than hot rolled steels of comparable chemistry.

1018

A low-carbon steel with medium manganese content. This alloy is easily heat treated and welded, and has a fair machinability. Conforms to ASTM A-108. Identification color: Green.

1045

A medium carbon steel having higher strength than 1018. Responds well to heat treatment. Commonly used for shafts, gears, and bolts. Conforms to ASTM A-108. Identification color: Red

12L14

A low carbon steel with lead added to greatly improve machining properties. Conforms to ASTM A-108. Identification color: Flo Red.

1144 Stress Relieved (Proof)

This grade of bar has been severely cold worked to produce high mechanical properties. The bars are then specially treated to relieve the stresses caused by cold working. These steels have the high strength, hardness, and wearability usually only associated with heat treated bars. Conforms to ASTM A-311. Identification color: Yellow.

Random Length

Due to the nature of cold finishing, bars may come in random length (i.e. 12' could be 10' to 14'). If you have special requirements please ask sales.

COLD ROLLED FLAT - 12' Random

Conforms to ASTM A-108 / 1018 Alloy

Size Inches	Weight Per Ft. Lbs.	12' Wt.
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1/8 x

1/4.....	0.106.....	1.28
3/8.....	0.159.....	1.92
1/2.....	0.213.....	2.56
5/8.....	0.266.....	3.19
3/4.....	0.319.....	3.83
7/8.....	0.372.....	4.46
1.....	0.425.....	5.10
1-1/4.....	0.531.....	6.37
1-1/2.....	0.638.....	7.66
1-3/4.....	0.744.....	8.93
2.....	0.850.....	10.20
2-1/4.....	0.956.....	11.47
2-1/2.....	1.063.....	12.76
3.....	1.275.....	15.30
3-1/2.....	1.488.....	17.86
4.....	1.700.....	20.40
5.....	2.125.....	25.50
6.....	2.550.....	30.60

3/16 x

1/4.....	0.159.....	1.91
3/8.....	0.239.....	2.87
1/2.....	0.319.....	3.83
5/8.....	0.398.....	4.78
3/4.....	0.478.....	5.74
7/8.....	0.558.....	6.70
1.....	0.638.....	7.66
1-1/4.....	0.797.....	9.56
1-1/2.....	0.956.....	11.47
1-3/4.....	1.116.....	13.39
2.....	1.275.....	15.30
2-1/4.....	1.434.....	17.21
2-1/2.....	1.594.....	19.13
3.....	1.913.....	22.96
3-1/2.....	2.231.....	26.77
4.....	2.550.....	30.60
5.....	3.188.....	38.26
6.....	3.825.....	45.90

1-800-333-7572

COLD ROLLED FLAT - 12' Random

Conforms to ASTM A-108 / 1018 Alloy

Size Inches	Weight Per Ft. Lbs.	12' Wt.
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1/4 x

3/8.....	0.319.....	3.83
1/2.....	0.425.....	5.10
5/8.....	0.531.....	6.37
3/4.....	0.638.....	7.66
7/8.....	0.744.....	8.93
1.....	0.850.....	10.20
1-1/8.....	0.956.....	11.47
1-1/4.....	1.063.....	12.76
1-3/8.....	1.170.....	14.04
1-1/2.....	1.275.....	15.30
1-3/4.....	1.488.....	17.86
2.....	1.700.....	20.40
2-1/4.....	1.913.....	22.96
2-1/2.....	2.125.....	25.50
2-3/4.....	2.338.....	28.06
3.....	2.550.....	30.60
3-1/4.....	2.760.....	33.12
3-1/2.....	2.975.....	35.70
3-3/4.....	3.190.....	38.28
4.....	3.400.....	40.80
4-1/2.....	3.825.....	45.90
5.....	4.250.....	51.00
6.....	5.100.....	61.20
8.....	6.800.....	81.60
10.....	8.500.....	102.00
12.....	10.200.....	122.40

5/16 x

3/8.....	0.398.....	4.78
1/2.....	0.531.....	6.37
3/4.....	0.797.....	9.56
7/8.....	0.930.....	11.17
1.....	1.063.....	12.76
1-1/4.....	1.328.....	15.94
1-1/2.....	1.594.....	19.13

1-800-333-7572

COLD ROLLED FLAT - 12' Random

COLD ROLLED FLAT - 12' Random

Conforms to ASTM A-108 / 1018 Alloy

Conforms to ASTM A-108 / 1018 Alloy

Size Inches	Weight Per Ft. Lbs.	12' Wt.
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Size Inches	Weight Per Ft. Lbs.	12' Wt.
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5/16 x (cont.)

2-1/2	2.656	31.87
3	3.188	38.26
3-1/2	3.719	44.63
4	4.250	51.00
5	5.313	63.76
6	6.375	76.50

1/2 x

5/8	1.063	12.76
3/4	1.275	15.30
7/8	1.488	17.86
1	1.700	20.40
1-1/4	2.125	25.50
1-1/2	2.550	30.60
1-3/4	2.975	35.70
2	3.400	40.80
2-1/4	3.825	45.90
2-1/2	4.250	51.00
2-3/4	4.675	56.10
3	5.100	61.20
3-1/2	5.950	71.40
4	6.800	81.60
4-1/2	7.650	91.80
5	8.500	102.00
6	10.200	122.40
7	11.900	142.80
8	13.600	163.20
10	17.000	204.00
12	20.400	244.80

3/8 x

1/2	0.638	7.66
5/8	0.797	9.56
3/4	0.956	11.47
7/8	1.116	13.39
1	1.275	15.30
1-1/4	1.594	19.13
1-1/2	1.913	22.96
1-3/4	2.231	26.77
2	2.550	30.60
2-1/4	2.869	34.43
2-1/2	3.188	38.26
2-3/4	3.506	42.07
3	3.830	45.96
3-1/2	4.463	53.56
4	5.100	61.20
4-1/2	5.738	68.86
5	6.375	76.50
6	7.650	91.80
8	10.200	122.40
10	12.750	153.00
12	15.300	183.60

5/8 x

3/4	1.594	19.13
1	2.125	25.50
1-1/4	2.656	31.87
1-1/2	3.188	38.26
1-3/4	3.719	44.63
2	4.250	51.00
2-1/4	4.781	57.34
2-1/2	5.313	63.76
3	6.375	76.50
3-1/2	7.438	89.26
4	8.500	102.00
5	10.625	127.50
6	12.750	153.00
8	17.000	204.00

7/16 x

1	1.488	17.86
2	2.977	35.730

COLD ROLLED FLAT - 12' Random

Conforms to ASTM A-108 / 1018 Alloy

Size Inches	Weight Per Ft. Lbs.	12' Wt.
3/4 x		
1	2.550	30.60
1-1/4	3.188	38.26
1-1/2	3.825	45.90
1-3/4	4.463	53.56
2	5.100	61.20
2-1/4	5.738	68.86
2-1/2	6.375	76.50
3	7.650	91.80
3-1/4	8.295	99.54
3-1/2	8.925	107.10
4	10.200	122.40
4-1/2	11.475	137.70
5	12.750	153.00
6	15.300	183.60
7	17.867	214.40
8	20.400	244.80
10	25.000	300.00
12	30.600	367.20

1 x

1-1/8	3.825	45.90
1-1/4	4.250	51.00
1-3/8	4.679	56.15
1-1/2	5.100	61.20
1-3/4	5.950	71.40
2	6.800	81.60
2-1/4	7.650	91.80
2-1/2	8.500	102.00
3	10.200	122.40
3-1/2	11.900	142.80
4	13.600	163.20
5	17.000	204.00
6	20.400	244.80
7	23.800	285.60
8	27.200	326.40
10	34.000	408.00
12	40.800	489.60

1-800-333-7572

COLD ROLLED FLAT - 12' Random

Conforms to ASTM A-108 / 1018 Alloy

Size Inches	Weight Per Ft. Lbs.	12' Wt.
1-1/4 x		
1-1/2	6.357	76.50
2	8.500	102.00
2-1/4	9.575	114.90
2-1/2	10.625	127.50
3	12.750	153.00
4	17.000	204.00
5	21.250	255.00
6	25.500	306.00
8	34.000	408.00

1-1/2 x

1-3/4	8.93	107.20
2	10.20	122.40
2-1/2	12.75	153.00
3	15.30	183.60
3-1/2	17.85	214.20
4	20.40	244.80
5	25.50	306.00
6	30.60	367.20
8	40.80	489.60
12	61.20	734.40

1-3/4 x

3	17.850	214.20
4	23.799	285.59

2 x

2-1/2	17.00	204.00
3	20.40	244.80
3-1/2	23.80	285.60
4	27.20	326.40
5	34.00	408.00
6	40.80	489.60
8	54.40	652.80

3 x

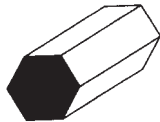
6	61.20	734.40
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1-800-333-7572

**HEXAGON BARS
COLD FINISHED-1018**

12' Random Lengths

Conforms to ASTM A108 / 1018



Size Inches	Weight Per Ft. Lbs.	12' Wt.
1/4	0.184	2.21
5/16	0.288	3.46
3/8	0.414	4.97
7/16	0.564	6.77
1/2	0.737	8.84
9/16	0.932	11.18
5/8	1.150	13.80
11/16	1.393	16.72
3/4	1.658	19.90
7/8	2.256	27.07
15/16	2.588	31.06
1	2.944	35.33
1-1/16	3.324	39.89
1-1/8	3.727	44.72
1-1/4	4.601	55.21
1-1/2	6.625	79.50
1-3/4	9.018	108.22
1-7/8	10.358	124.30
2	11.780	141.36
2-1/2	18.400	220.80

**COLD FINISHED
ROUNDS - 1018**

12' - 20' Random Length

Conforms to ASTM A108 / 1018



Size in Inches	Weight Per Ft. in Lbs.	12'	20'
1/8	.042	.504	
3/16	.094	1.13	
1/4	.167	2.00	
5/16	.261	3.13	
3/8	.376	4.51	7.52
7/16	.511	6.13	
1/2	.668	8.02	13.36
9/16	.845	10.14	

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COLD FINISHED ROUNDS

1018 (cont.)

Conforms to ASTM A108 / 1018

Size in Inches	Weight Per Ft. in Lbs.	12'	20'
5/8	1.04	12.48	20.80
11/16	1.26	15.12	
3/4	1.50	18.00	30.00
13/16	1.76	21.12	
7/8	2.04	24.48	
15/16	2.35	28.20	47.00
1	2.67	32.04	53.40
1-1/16	3.01	36.12	
1-1/8	3.38	40.56	
1-3/16	3.77	45.24	
1-1/4	4.17	50.04	83.40
1-5/16	4.60	55.20	
1-3/8	5.05	60.60	
1-7/16	5.52	66.24	
1-1/2	6.01	72.12	120.20
1-9/16	6.52	78.24	130.40
1-5/8	7.05	84.60	
1-11/16	7.60	91.20	152.00
1-3/4	8.18	98.16	163.60
1-13/16	8.77	105.24	175.40
1-7/8	9.39	112.68	187.00
1-15/16	10.02	120.24	200.40
2	10.68	128.16	213.60
2-1/16	11.36		227.20
2-1/8	12.06		241.20
2-1/4	13.52		270.40
2-5/16	14.28		285.60
2-3/8	15.06		301.20
2-7/16	15.87		317.40
2-1/2	16.69	200.28	333.80
2-5/8	18.40		368.00
2-11/16	19.29		385.80
2-3/4	20.19	242.40	404.00
2-7/8	22.07	264.84	441.40
2-15/16	23.04		460.80
3	24.03		480.60
3-1/8	26.08		521.60
3-1/4	28.21		564.20
3-7/16	31.58		631.70
3-1/2	32.71		654.20

1-800-333-7572

COLD FINISHED ROUNDS (cont.)

Size in Inches	Weight Per Ft. in Lbs.	12'	20'
3-3/4	37.55		751.00
3-15/16	41.43		828.80
4	42.70	512.76	854.60
4-1/2	54.08		1081.60
4-3/4	60.25		1205.00
4-15/16	65.10		1302.00
5	66.76		1335.20
6	96.13		1922.60

COLD FINISHED ROUNDS 1045

STOCK LENGTH 12' - 20' RANDOM

Size in Inches	Weight Per Ft. in Lbs.	12'	20'
3/8	0.375	4.51	
5/8	1.040	12.48	
3/4	1.500		30.00
7/8	2.040	24.48	
1	2.670	32.04	
1 TGP	2.670		53.40
1-1/16	3.010		60.20
1-1/8	3.380	40.56	
1-3/16	3.770	45.24	
1-1/4	4.200	50.40	83.40
1-7/16	5.520	66.24	
1-1/2	6.010	72.12	120.20
1-5/8	7.050	84.60	
1-3/4	8.180		163.60
2	10.680	128.16	
2-1/2	16.690	200.30	
3	24.030		480.60
3-3/4	37.550		751.00
4	42.730		854.60

COLD FINISHED ROUNDS 12L14

STOCK LENGTH 12' RANDOM

Size in Inches	Weight Per Ft. in Lbs.	12'
1/4	0.154	2.00
5/16	0.260	3.13
3/8	0.376	4.51
1/2	0.668	8.02
5/8	1.040	12.48
3/4	1.500	18.00
7/8	2.040	24.48
1	2.670	32.04

COLD FINISHED ROUNDS 12L14

Size in Inches	Weight Per Ft. in Lbs.	12'
1-1/16	3.010	36.12
1-1/8	3.380	40.56
1-1/4	4.170	50.04
1-5/16	4.600	55.20
1-1/2	6.010	72.12

COLD FINISHED ROUNDS 1215

STOCK LENGTH 12' Random Length

Size in Inches	Weight Per Ft. in Lbs.	12'
3/8	0.375	4.51

COLD FINISHED SQUARES

C1018 - 12' Random Length



Size in Inches	Weight Per Ft. in Lbs.	12'
1/8	0.053	0.64
3/16	0.120	1.44
1/4	0.213	2.56
5/16	0.332	3.98
3/8	0.478	5.74
7/16	0.651	7.81
1/2	0.850	10.20
9/16	1.080	12.96
5/8	1.330	15.96
11/16	1.610	19.32
3/4	1.910	22.92
7/8	2.600	31.20
15/16	2.990	35.88
1	3.400	40.80
1-1/16	3.830	45.96
1-1/8	4.300	51.60
1-3/16	4.800	57.60
1-1/4	5.310	63.72
1-3/8	6.430	77.16
1-1/2	7.650	91.80
1-3/4	10.410	124.92
2	13.600	163.20
2-1/4	17.230	206.70
2-1/2	21.250	255.00
3	30.600	367.20
4	54.450	653.40

STRES RELIEVED ROUNDS 1144
Cold Finish
12' Random Length
 Conforms to A311

Size in Inches	Weight Per Ft. in Lbs.	12'
1/4	0.167	2.00
5/16	0.261	3.13
3/8	0.376	4.51
7/16	0.511	6.13
1/2	0.668	8.02
9/16	0.845	10.14
5/8	1.040	12.48
11/16	1.260	15.12
3/4	1.500	18.00
13/16	1.760	21.12
7/8	2.040	24.48
15/16	2.350	28.20
1	2.670	32.04
1-1/16	3.010	36.12
1-1/8	3.380	40.56
1-3/16	3.770	45.24
1-1/4	4.170	50.04
1-5/16	4.600	55.20
1-3/8	5.050	60.60
1-7/16	5.520	66.24
1-1/2	6.010	72.12
1-9/16	6.520	78.24
1-5/8	7.050	84.60
1-11/16	7.600	91.20
1-3/4	8.180	98.16
1-7/8	9.390	112.68
1-15/16	10.020	120.24
2	10.680	128.16
2-1/8	12.060	144.72
2-3/16	12.780	153.36
2-1/4	13.520	162.24
2-3/8	15.060	180.72
2-7/16	15.870	190.44
2-1/2	16.690	200.28
2-5/8	18.400	220.80
2-3/4	20.190	242.40
2-7/8	22.070	264.84
2-15/16	23.040	276.48
3	24.030	288.36
3-1/4	28.210	338.52
3-1/2	32.710	392.52
3-3/4	37.550	450.60
4	42.730	512.76
4-1/2	54.130	649.50

Notes:

Pipe-Carbon Steel

Intended for mechanical and pressure applications. This pipe most commonly used for steam, water, gas, and airlines. Pressure tested.

Furnace Continuous Butt Welded

Not intended for close coiling, bending, or high temperature service. Conforms to ASTM A53 Type F Grade A.

Electric Resistance Welded (ERW)

Suitable for welding, coiling, bending, and flaring. Conforms to ASTM A53 Type E Grade B.

Pipe Size (ERW) Tubing

Tubing sized the same as pipe, intended for structural use only. This tube has a better finish and higher strength than pipe. Often used for railings. Conforms to ASTM A500 Grade B.

BLACK PIPE PLAIN END

TESTED - LINE PIPE

Sch 40 - 21' Length

Conforms to ASTM-A53

Size	OD	Wall	Wt./Ft.
1/8"	0.405	0.068	0.24
1/4"	0.540	0.088	0.42
3/8"	0.675	0.091	0.56
1/2"	0.840	0.109	0.85
3/4"	1.050	0.113	1.13
1"	1.315	0.133	1.68
1-1/4"	1.660	0.140	2.27
1-1/2"	1.900	0.145	2.72
2"	2.375	0.154	3.65
2-1/2"	2.875	0.203	5.79
3"	3.500	0.216	7.58
3-1/2"	4.000	0.226	9.11
4"	4.500	0.237	10.79
5"	5.563	0.258	14.62
6"	6.625	0.280	18.97
8"	8.625	0.322	28.55
10"	10.75	0.365	40.48
12"	12.750	0.375	49.57

GALVANIZED PIPE PLAIN END

Sch 40 - 21' Length

Conforms to ASTM-A53

Size	OD	Wall	Wt./Ft.
1/8"	0.405	0.068	0.24
1/4"	0.540	0.088	0.42
3/8"	0.675	0.091	0.56
1/2"	0.840	0.109	0.85
3/4"	1.050	0.113	1.13
1"	1.315	0.133	1.68
1-1/4"	1.660	0.140	2.28
1-1/2"	1.900	0.145	2.73
2"	2.375	0.154	3.68
2-1/2"	2.875	0.203	5.79
3"	3.500	0.216	7.57
3-1/2"	4.000	0.226	9.81
4"	4.500	0.237	10.79

EXTRA HEAVY BLACK P.E. PIPE
Sch 80 - 21' Length

Size	OD	Wall	Wt./Ft.	
1/4"	0.540	0.119	0.54	
3/8"	0.675	0.126	0.73	
1/2"	0.840	0.147	1.09	
3/4"	1.050	0.154	1.47	
1"	1.315	0.179	2.17	
1-1/4"	1.660	0.191	3.00	
1-1/2"	1.900	0.200	3.63	
2"	2.375	0.218	5.02	
2-1/2"	2.875	0.276	7.66	
3"	3.500	0.300	10.25	
3-1/2"	4.000	0.318	12.51	
4"	4.500	0.337	14.98	
5"	5.563	0.375	20.78	
6"	6.625	0.432	28.57	

PIPE SIZE TUBING

21' Lengths

Conforms to ASTM-A500 Grade B

Size	OD	Wall	Wt./Ft.	Wt./21'
1/2"	0.84	0.109	0.85	17.90
3/4"	1.05	0.109	1.09	23.00
1"	1.31	0.120	1.53	32.17
1-1/4"	1.66	0.105	1.81	37.93
1-1/4"	1.66	0.135	2.18	45.87
1-1/2"	1.90	0.109	2.09	43.80
1-1/2"	1.90	0.135	2.53	53.07
2"	2.37	0.148	3.52	73.92
2-1/2"	2.88	0.203	5.79	121.59
3"	3.50	0.220	7.57	159.10
3-1/2"	4.00	0.220	8.88	186.48
4"	4.50	0.237	10.79	226.59

Hot Rolled electric welded,
uncoated not pressure tested.

**CALL FOR LARGER SIZES
DIFFERENT SCHEDULES**

Stainless Pipe - See Stainless Section
Aluminum Pipe - See Aluminum Section

ROUND TUBING - TERMS

COLD DRAWN SEAMLESS (CDS)

Produced to OD and ID dimensions by a process that pierces a hot rolled bar. Normally furnished in the "as drawn" condition. CDS offers good surface quality and greater mechanical properties than hot finished seamless tubing. Made from 1026 grade steel. Conforms to ASTM A519.

DRAWN OVER MANDREL (DOM)

DOM has very little wall variation and no spiraling eccentricity. The tube is formed and welded from strip steel which has very little gauge variation. The tube is then cold drawn to size, causing the weld seam to virtually disappear. Tubing 10 ga and lighter is made from 1020 grade steel, heavier than 10 ga is made from 1026. Conforms to ASTM A513 Type 5 (mandrel drawn).

**Drawn Over Mandrel Tubing:
Advantages of DOM**

1. More uniform wall thickness
2. Better surface finish
3. Less stock removal
4. No spiral on ID
5. Denser ID surface
6. Closer tolerance
7. Comparable or lower cost

ELECTRIC RESISTANCE WELDED TUBES are produced from a cold rolled or hot rolled scale-free strip which is formed by rolls at room temperature into a tubular shape. Welding takes place as an electric current heats the two edges of the strip as they are pressed together. Only a narrow band of metal is heated while the rest of the tube remains at room temperature. The weld flash is always trimmed off the outside of the tube. The flash can also be trimmed from the inside by special tooling.

**ROUND TUBING
BUSHING STOCK
Random 20' Lengths**

DOM - Drawn Over Mandrel
CDBW - Cold Drawn Butt Weld
CDST - Cold Drawn Seamless Tube
HFS - Hot Finished Seamless

OD	Type	Wall Thickness	Weight/ Foot
1/2"	DOM	.049	0.235
1/2"	DOM	.095	0.411
3/4"	DOM	.109	0.745
3/4"	DOM	.120	0.807
7/8"	DOM	.120	0.967
7/8"	DOM	.187	1.380
1"	DOM	.120	1.128
1"	DOM	.156	1.405
1"	CDBW	.172	1.517
1"	DOM	.250	2.000
1"	CDST	.375	2.500
1-1/8"	DOM	.059	0.735
1-1/8"	DOM	.250	2.330
1-1/4"	DOM	.120	1.448
1-1/4"	DOM	.250	2.670
1-1/4"	DOM	.281	2.900
1-3/8"	DOM	.250	3.000
1-3/8"	DOM	.312	3.551
1-1/2"	DOM	.187	2.634
1-1/2"	DOM	.234	3.163
1-1/2"	DOM	.250	3.338
1-1/2"	DOM	.281	3.657
1-1/2"	DOM	.312	3.970
1-1/2"	DOM	.344	4.246
1-1/2"	DOM	.375	4.500
1-5/8"	DOM	.250	3.670
1-5/8"	DOM	.312	4.380
1-3/4"	DOM	.095	1.680
1-3/4"	DOM	.219	3.581
1-3/4"	DOM	.250	4.000
1-3/4"	DOM	.375	5.500
1-7/8"	DOM	.250	4.330
1-7/8"	DOM	.375	6.007
2"	DOM	.250	4.670
2"	DOM	.375	6.500
2"	DOM	.485	7.847
2"	CDST	.500	8.010
2-1/8"	DOM	.156	3.280
2-1/8"	DOM	.312	6.057
2-1/8"	DOM	.500	8.680
2-1/4"	DOM	.375	7.500
2-1/4"	CDST	.500	9.350
2-1/2"	DOM	.250	6.000
2-1/2"	DOM	.281	6.658
2-1/2"	DOM	.375	8.500
2-1/2"	DOM	.500	10.680
2-5/8"	DOM	.250	6.341
2-5/8"	DOM	.312	7.730
2-5/8"	DOM	.375	9.010
2-7/8"	DOM	.375	10.000
3"	DOM	.250	7.343
3"	DOM	.375	10.509
3"	DOM	.500	13.350
3"	CDST	.750	18.020

**ROUND TUBING
BUSHING STOCK
(continued)**

DOM - Drawn Over Mandrel
CDBW - Cold Drawn Butt Weld
CDST - Cold Drawn Seamless Tube
HFS - Hot Finished Seamless

OD	Type	Wall Thickness	Weight/ Foot
3-1/8"	DOM	.375	11.010
3-1/4"	DOM	.500	14.690
3-3/8"	DOM	.500	15.350
3-1/2"	DOM	.250	8.678
3-1/2"	DOM	.375	12.500
3-1/2"	DOM	.625	19.190
3-1/2"	CDST	.750	22.000
3-5/8"	DOM	.375	13.020
4"	DOM	.438	16.660
4"	DOM	.500	18.690
4"	CDST	.750	26.030
4"	CDST	1	32.000
4-1/2"	DOM	.438	19.000
4-1/2"	CDST	.625	25.900
5"	DOM	.375	18.520
5"	DOM	.500	24.030
5"	DOM	.625	18.520
5-1/4"	DOM	.312	16.500
5-1/2"	DOM	.625	32.539
7"	DOM	.625	42.550

1-800-333-7572

**ROUND TUBING
ELECTRIC WELD**

Random 20' Lengths

Conforms to ASTM A-513

Type 1: A.W.H.R. "as welded"
from hot rolled steel

Type 2: A.W.C.R. "as welded"
from cold Rolled steel

OD	Type	Wall Thickness	Weight/ Foot
1/2"	1	.065	0.300
3/4"	1	.065	0.475
3/4"	1	.120	0.807
7/8"	1	.065	0.562
1"	2	.065	0.650
1"	1	.083	0.815
1"	1	.120	1.128
1-1/8"	1	.120	1.288
1-1/4"	1	.065	0.825
1-1/4"	1	.095	1.170
1-1/4"	1	.120	1.448
1-1/2"	1	.065	0.996
1-1/2"	1	.083	1.253
1-1/2"	1	.095	1.425
1-1/2"	1	.120	1.769
1-5/8"	1	.095	1.550
1-3/4"	1	.095	1.680
2"	1	.083	1.700
2"	1	.120	2.400
2"	1	.134	2.670
2-1/2"	1	.120	3.050
3"	1	.065	2.040
3"	1	.109	3.365
3"	1	.120	3.694
3"	1	.134	4.102
3"	1	.180	5.421
4"	1	.120	4.970
5"	1	.120	6.250
5"	1	.250	12.679
6"	1	.120	7.530
8"	1	.120	10.510
10"	1	.120	13.180

Square and Rectangular Tubing

Mechanical:

An electric resistance welded tubing produced from low carbon steel. Offers good surface finish and forming characteristics. All sizes have the OD flashing removed, with the ID flashing on. Generally available in wall thickness lighter than 11ga., in widths less than 3 inches. Conforms to ASTM A513 Type 1 (AWHR), or Type 2 (AWCR).

Structural:

An electric resistance welded tube produced from a structural grade of steel. Offers a high strength-to-weight ratio, yet is easily welded, formed, punched, and drilled. All sizes have the OD flashing removed, with the ID flashing on. Conforms to ASTM A500-Grade B. Minimum mechanical properties: Tensile Strength--58,000 psi, Yield Strength--46,000 psi, Elongation in 2" -- 23%.

Gauge - Decimal Equivalents

The usual gauge designation for welded steel Tube is BWG (Birmingham Wire Gauge).

Gauge number	Decimal Eq.
6	.203
7	.180
8	.165
9	.148
10	.134
11	.120
12	.109
14	.083
16	.065
18	.049
20	.035

SQUARE TUBING

A513 or A500 Grade B

Stock Lengths 20' - 24' - 40'



Outside Dimension	Gauge Wall Thickness	Weight Per Ft.
A-513		
1/2 x 1/2	16	0.385
3/4 x 3/4	18	0.467
3/4 x 3/4	16	0.606
3/4 x 3/4	14	0.753
3/4 x 3/4	11	1.028
1 x 1	16	0.827
1 x 1	14	1.035
1 x 1	13	1.169
1 x 1	12	1.321
1 x 1	11	1.436
1-1/4 x 1-1/4	16	1.048
1-1/4 x 1-1/4	14	1.317
1-1/4 x 1-1/4	12	1.691
1-1/2 x 1-1/2	16	1.269
1-1/2 x 1-1/2	14	1.600
1-1/2 x 1-1/2	12	2.062
1-1/2 x 1-1/2	11	2.252
1-3/4 x 1-3/4	14	1.882
1-3/4 x 1-3/4	11	2.660
2 x 2	14	2.160
2 x 2	13	2.461
2 x 2	12	2.700
2 x 2	11	3.070
A-500		
1-1/4 x 1-1/4	11	1.844
1-1/4 x 1-1/4	10	2.030
1-1/4 x 1-1/4	3/16	2.400
1-1/2 x 1-1/2	3/16	3.040
1-1/2 x 1-1/2	1/4	4.000
2 x 2	3/16	4.320
2 x 2	1/4	5.400
2-1/2 x 2-1/2	11	3.900
2-1/2 x 2-1/2	3/16	5.600
2-1/2 x 2-1/2	1/4	7.100
2-1/2 x 2-1/2	14	2.670
3 x 3	14	3.300
3 x 3	11	4.750
3 x 3	3/16	6.880
3 x 3	1/4	8.800
3 x 3	5/16	10.580
3 x 3	3/8	12.150
3-1/2 x 3-1/2	11	5.600
3-1/2 x 3-1/2	3/16	8.160
3-1/2 x 3-1/2	1/4	10.500
3-1/2 x 3-1/2	5/16	12.700
4 x 4	11	6.450
4 x 4	3/16	9.440
4 x 4	1/4	12.200
4 x 4	5/16	14.840
4 x 4	3/8	17.250
4 x 4	1/2	21.610
4-1/2 x 4-1/2	1/4	13.900
4-1/2 x 4-1/2	3/16	10.700
5 x 5	3/16	11.990
5 x 5	1/4	15.600
5 x 5	5/16	19.090

SQUARE TUBING (cont.)

Stock Lengths 20' - 24' - 40'

Outside Dimension	Gauge Wall Thickness	Weight Per Ft.
5 x 5	3/8	22.350
5 x 5	1/2	28.410
6 x 6	3/16	14.550
6 x 6	1/4	19.000
6 x 6	5/16	23.350
6 x 6	3/8	27.450
6 x 6	1/2	35.210
7 x 7	3/16	17.079
7 x 7	1/4	22.400
7 x 7	3/8	32.550
7 x 7	1/2	42.050
8 x 8	3/16	19.660
8 x 8	1/4	25.800
8 x 8	3/8	37.650
8 x 8	1/2	48.810
10 x 10	1/4	32.589
10 x 10	1/2	62.400
12 x 12	1/4	32.600
12 x 12	3/8	58.100
12 x 12	1/2	76.070

Call for Stock Lengths. Larger Sizes Available

RECTANGULAR TUBING

Stock Lengths A513/A500 Grade B

20' - 24' - 40'

Outside Dimension	Gauge Wall Thickness	Weight Per Ft.
A-513		
1 x 1/2	16	.606
1-1/2 x 3/4	16	.936
1-1/2 x 3/4	14	1.176
1-1/2 x 1	14	1.320
1-1/2 x 1	11	1.840
2 x 1	16	1.270
2 x 1	14	1.600
2 x 1	11	2.250
2 x 1	3/16	3.349
2 x 1-1/4	14	1.740
2 x 1-1/4	11	2.460
A-500		
2 x 1-1/2	14	1.880
2 x 1-1/2	11	2.660
2-1/2 x 1	14	1.880
2-1/2 x 1-1/2	14	2.160
3 x 1	16	1.710
3 x 1	14	2.100
3 x 1	11	3.050
2-1/2 x 1-1/2	11	3.050
2-1/2 x 1-1/2	3/16	4.320
2-1/2 x 1-1/2	1/4	5.400
3 x 1-1/2	14	2.390
3 x 1-1/2	11	3.480
3 x 1-1/2	3/16	4.960
3 x 1-1/2	1/4	7.010

RECTANGULAR TUBING

Stock Lengths - 20' - 24' - 40'

Outside Dimension	Gauge Wall Thickness	Weight Per Ft.
3 x 2	14	2.670
3 x 2	11	3.900
3 x 2	3/16	5.600
3 x 2	1/4	7.100
3 x 2	5/16	8.430
4 x 2	14	3.300
4 x 2	11	4.750
4 x 2	3/16	6.880
4 x 2	1/4	8.800
4 x 2	5/16	10.579
4 x 3	11	5.600
4 x 3	3/16	8.160
4 x 3	1/4	10.500
4 x 3	5/16	12.666
4 x 3	3/8	14.720
5 x 2	11	5.660
5 x 2	3/16	8.160
5 x 2	3/8	14.710
5 x 2	1/4	10.500
5 x 3	11	6.459
5 x 3	3/16	9.440
5 x 3	1/4	12.200
5 x 3	3/8	17.250
5 x 3	1/2	21.630
6 x 2	11	6.450
6 x 2	3/16	9.440
6 x 2	1/4	12.200
6 x 2	5/16	14.840
6 x 2	3/8	17.269
6 x 3	11	7.330
6 x 3	3/16	10.710
6 x 3	1/4	13.900
6 x 3	3/8	19.800
6 x 4	11	8.160
6 x 4	3/16	11.990
6 x 4	1/4	15.600
6 x 4	5/16	19.080
6 x 4	3/8	22.350
6 x 4	1/2	28.410
7 x 3	3/16	11.990
7 x 3	1/4	15.600
7 x 3	3/8	22.369
7 x 5	3/16	14.550
7 x 5	1/4	19.000
7 x 5	3/8	27.450
7 x 5	1/2	35.210
8 x 2	3/16	11.990
8 x 2	1/4	15.600
8 x 2	3/8	22.350
8 x 3	3/16	13.270

1-800-333-7572

RECTANGULAR TUBING

Stock Lengths - 20' - 24' - 40'

Outside Dimension	Gauge Wall Thickness	Weight Per Ft.
8 x 4	3/16	14.550
8 x 4	1/4	19.000
8 x 4	3/8	27.450
8 x 4	1/2	35.210
8 x 6	3/16	17.079
8 x 6	1/4	22.400
8 x 6	3/8	32.550
5 x 2	1/4	10.500
5 x 3	3/16	9.440
5 x 3	1/4	12.200
5 x 5	3/16	11.990
6 x 2	11	6.450
6 x 2	3/16	9.440
6 x 2	1/4	12.220
6 x 3	3/16	10.710
6 x 3	1/4	13.900
6 x 3	3/8	19.820
6 x 6	1/4	19.000
8 x 6	1/2	42.010
10 x 2	3/16	14.550
10 x 2	1/4	19.000
10 x 4	3/16	17.109
10 x 4	1/4	22.400
10 x 4	3/8	32.550
10 x 4	1/2	42.049
10 x 6	1/4	25.800
10 x 6	3/8	37.650
10 x 6	1/2	48.850
12 x 2	3/16	17.110
12 x 2	1/4	22.400
12 x 4	1/4	25.800
12 x 4	3/8	37.650

1-800-333-7572

CARBON STEEL SHEETS & PLATES A SUMMARY OF GRADES

ASTM A-569

This specification covers hot-rolled carbon steel sheets of commercial quality, in coils and cut lengths, having a maximum carbon of 0.15%. This material is intended for parts where bending, moderate forming or drawing, and welding may be involved.

C max.	Mn max.	P max.	S max.
.02/15	0.60	0.030	0.035
Tensile 53,000			
Yield 30,000 to 50,000 psi			

ASTM A-36

This specification covers carbon plate of structural quality.

Thickness	C max.	Mn max.	P max.	S max.	Si max.
to 3/4"	0.25	.80/1.20	0.04	0.05	
3/4"-1-1/2"	0.25	.80/1.20	0.04	0.05	
1/2"-2-1/2"	0.26	.85/1.20	0.04	0.05	.15/.40
2-1/2"-4"	0.27	.85/1.20	0.04	0.05	.15/.40
over 4"	0.29	.85/1.20	0.04	0.05	.15/.40

Tensile Strength 58/80,000 psi
Yield Strength 36,000 Min. psi
Elongation 18% Min.

ASTM A-606-sheet

ASTM A-588-plate

(CORTEN) Four or five times more resistant to atmospheric corrosion than low carbon steel. Excellent weldability and formability. Product is available in two types: Type 2 contains 0.18 min. copper. Type 4 provides a level of corrosion resistance better than that of carbon steels with or without copper addition.

C max.	Mn max.	P max.
0.26	1.30	0.06

Tensile Strength 70,000 psi
Yield Strength 50,000 psi
Elongation in 2" 22%

AR-200

Abrasion resistant, medium carbon, high magnesium steel designed for sliding abrasion applications.
Brinell hardness - 185-235

AR-400

This steel is heat treated to produce a high strength, high hardness product with a Brinell Hardness range of 360 to 440.

ASTM A-514 (T-1)

Weldable, quenched and tempered high strength steel with good impact abrasion resistance characteristics. Product is available in 13 grades in addition to Grade B.

Element	Grade B
Carbon	0.12-0.21
Manganese	0.7-1.0
Phosphorous	0.035
Sulphur	0.035
Silicon	0.20-0.35
Chromium	0.40-0.60
Molybdenum	0.15-0.25
Vanadium	0.03-0.08
Titanium	0.01-0.03

Tensile Strength 110,000-130,000 psi
Yield Strength 100,000 psi
Elongation in 2" 18%

State Line Supply Co.

CARBON STEEL GRADES, Continued

ASTM A-607 Grade 50

This specification covers high-strength, low alloy hot rolled sheets or cold rolled sheets in either cut lengths or coils. The addition of alloying elements raises the yield point offering higher strength-to-weight ratios.

This material is bendable but requires larger radius. The A-607 specification covers two classes and five grades in addition to Grade 50.

C max.	Mn max.	P max.	S max.
0.23	1.35	0.04	0.04

Tensile Strength 65,000
Yield Strength 50,000
Elongation in 2" 22%

ASTM A-572 Grade 50

High strength low alloy plate used to reduce weight of finished product. Larger radius required for forming. Better resistance to wear and abrasion.

Thickness	C max.	Mn max.	P max.	S max.	Si max.
to 1-1/2"	0.23	1.35	0.04	0.05	0.40
over 1-1/2"	0.23	1.35	0.04	0.05	0.15/0.40

Tensile 65,000
Yield 50,000
Elongation in 2" 21%

ASTM A-715 Grade 50

This specification covers high-strength, low alloy hot rolled steel sheet and strip, and cold rolled sheet having improved formability when compared with steels covered by Specifications A-606 and A-607. The product is available in four strength levels.

C max.	Mn max.	P max.	S max.
0.15	1.65	0.02	0.025

Tensile Strength 60,000
Yield Strength 50,000
Elongation in 2" 24%

ASTM A-936 Grade 50

This specification covers heavy thickness, high-strength, low alloy hot rolled sheet and strip, in coils beyond the size limits of Specification A-715. The product is intended for miscellaneous applications where higher strength, savings in weight, improved formability and weldability are important. It's available only in coils and in three strength levels, in addition to Grade 50.

C max.	Mn max.	P max.	S max.
0.15	1.65	0.025	0.035

Tensile Strength 60,000
Yield Strength 50,000
Elongation in 2" 22%

ASTM A656 Grade 80

This specification covers high strength, low alloy, hot rolled structural steel plate for use in truck frames, crane booms, rail cars and similar applications. The product offers good formability and is furnished in two types and four strength grades.

Thickness	C max.	Mn max.	P max.	S max.	Si max.
max. 3/4"	0.18	1.65	0.025	0.035	0.60

Tensile 90,000
Yield 80,000
Elongation in 2" 15%

**STANDARD SHEET GAUGE,
WEIGHTS AND COLOR CODES**

Carbon Sheets to U.S.S. or Mfrs. Gauge			Color Codes
Gauge No.	Thickness in Inches	Pounds Per Sq. Ft.	
3	.2391	10.000	Dark Green Gold White Orange Baby Blue Olive Green Red Yellow Dark Blue Baby Blue Dark Green Orange Gold
4	.2242	9.375	
5	.2092	8.750	
6	.1943	8.125	
7	.1793	7.500	
8	.1644	6.875	
9	.1495	6.250	
10	.1345	5.625	
11	.1196	5.000	
12	.1046	4.375	
14	.0747	3.125	
16	.0598	2.500	
18	.0478	2.000	
20	.0359	1.500	
22	.0299	1.250	
24	.0239	1.000	
26	.0179	0.7500	
28	.0149	0.6080	

Galvanized Sheets To Galvanized Sheet Gauge			Stainless Sheets To St. Sheet Ga.		Color Codes
Gauge No.	Thickness in Inches	Pounds Sq. Ft.	Thickness in Inches	300 Series	
8	.1681	7.031	.171875	7.2187	Gold
9	.1532	6.406	.156250	6.5625	White
10	.1382	5.781	.140625	5.9062	
11	.1233	5.516	.125000	5.2500	Orange
12	.1084	4.531	.109375	4.5937	Baby Blue
14	.0785	3.281	.078125	3.2812	Olive Green
16	.0635	2.656	.062500	2.6250	Red
18	.0516	2.156	.050000	2.1000	Yellow
20	.0396	1.656	.037500	1.5750	Dark Blue
22	.0336	1.406	.031250	1.3125	Baby Blue
24	.0276	1.156	.025000	1.0500	Dark Green
26	.0217	0.9063	.018750	0.7875	Orange
28	.0187	0.7813	.015625	.6562	Gold

1-800-333-7572

PLATE - HR
(8' Thru 20' Length)



CQ / A-36

Thickness		Wt./Sq. Foot	Est. Weight
1/4	36 x 96.....	10.20	244.8
	36 x 120.....		306.0
	48 x 48.....		163.0
	48 x 96.....		326.0
	48 x 120.....		408.0
	48 x 144.....		489.6
	60 x 96.....		408.0
	60 x 120.....		510.0
	60 x 144.....		612.0
	72 x 96.....		489.6
72 x 120.....		612.0	
72 x 144.....		734.4	
5/16	48 x 96.....	12.75	408.0
	48 x 120.....		510.0
	60 x 120.....		637.5
	72 x 120.....		765.0
3/8	36 x 96.....	15.30	367.2
	36 x 120.....		459.0
	48 x 96.....		490.0
	48 x 120.....		612.0
	60 x 96.....		612.0
	60 x 120.....		765.0
	60 x 144.....		918.0
	72 x 96.....		734.4
	72 x 120.....		918.0
	72 x 144.....		1101.6
96 x 240.....		2450.0	
1/2	48 x 96.....	20.40	652.0
	48 x 120.....		816.0
	60 x 96.....		816.0
	60 x 120.....		1020.0
	72 x 120.....		1224.0
	96 x 240.....		3260.0
5/8	48 x 48.....	25.50	408.0
	48 x 96.....		816.0
	48 x 120.....		1020.0
	60 x 96.....		1020.0
	60 x 120.....		1275.0
	72 x 120.....		1530.0
96 x 240.....		4080.0	
3/4	48 x 96.....	30.60	979.0
	48 x 120.....		1224.0
	60 x 120.....		1530.0
	72 x 120.....		1836.0
	96 x 240.....		4896.0
1	48 x 96.....	40.80	1306.0

PLATE - HR (cont.)
(8' Thru 20' Length)

CQ / A-36

Thickness		Wt./Sq. Foot	Est. Weight
1	48 x 120.....	.....	1632.0
	60 x 120.....	.....	2040.0
	72 x 120.....	.....	2448.0
	96 x 240.....	.....	6528.0
1-1/4	48 x 96.....	51.00	1632.0
	48 x 120.....	.....	2040.0
	60 x 96.....	.....	2040.0
	60 x 120.....	.....	2550.0
	72 x 120.....	.....	3060.0
	96 x 240.....	.....	8160.0
1-1/2	48 x 96.....	61.20	1958.0
	60 x 120.....	.....	3060.0
	72 x 120.....	.....	3672.0
	96 x 240.....	.....	9790.0
2	48 x 96.....	81.60	2611.0
	96 x 240.....	.....	1305.4
2-1/2	48 x 96.....	.....	3267.2
3	48 x 96.....	142.90.....	4572.8

HOT ROLLED SHEET

Mill Edge CQ/A-36

Thickness	Size	Wt/ Sq. Ft.	Est. Weight	
7GA	36 x 96.....	7.500	180.00	
	36 x 120.....	.....	225.00
	48 x 72.....	.....	180.00
	48 x 96.....	.....	240.00
	48 x 120.....	.....	300.00
	48 x 144.....	.....	360.00
	60 x 96.....	.....	300.00
	60 x 120.....	.....	375.00
	60 x 144.....	.....	450.00
	72 x 96.....	.....	360.00
	72 x 120.....	.....	450.00
	72 x 144.....	.....	540.00
	8GA	48 x 96.....	6.885	220.00
	10GA	36 x 96.....	5.625	135.00
36 x 120.....		.....	168.75
48 x 96.....		.....	180.00
48 x 120.....		.....	225.00
48 x 144.....		.....	270.00
60 x 96.....		.....	225.00
60 x 120.....		.....	281.30

HOT ROLLED SHEET (cont.)

Mill Edge CQ/A-36

Thickness	Size	Wt/ Sq. Ft.	Est. Weight
10GA	60 x 144.....	5.625	337.50
	72 x 96.....	.....	270.00
	72 x 120.....	.....	337.50
	72 x 144.....	.....	405.00
11GA	48 x 96.....	5.000	160.00
	48 x 120.....	.....	200.00
	48 x 144.....	.....	240.00
	60 x 96.....	.....	200.00
	60 x 120.....	.....	250.00
	60 x 144.....	.....	300.00
	72 x 96.....	.....	240.00
	72 x 120.....	.....	300.00
12GA	36 x 96.....	4.375	105.00
	36 x 120.....	.....	131.25
	48 x 96.....	.....	140.00
	48 x 120.....	.....	175.00
	48 x 144.....	.....	210.00
	60 x 96.....	.....	175.00
	60 x 120.....	.....	218.80
	60 x 144.....	.....	262.50
	72 x 96.....	.....	210.00
	72 x 120.....	.....	262.50
	72 x 144.....	.....	315.00
14GA	36 x 96.....	3.125	75.00
	36 x 120.....	.....	93.75
	48 x 96.....	.....	100.00
	48 x 120.....	.....	125.00
	48 x 144.....	.....	150.00
	60 x 96.....	.....	125.00
	60 x 120.....	.....	156.30
	60 x 144.....	.....	187.50
	72 x 96.....	.....	150.00
	72 x 120.....	.....	187.50
72 x 144.....	.....	225.00	
16GA	36 x 96.....	2.550	60.00
	36 x 120.....	.....	75.00
	48 x 96.....	.....	80.00
	48 x 120.....	.....	100.00
	48 x 144.....	.....	120.00
	60 x 96.....	.....	100.00
	60 x 120.....	.....	125.00
	60 x 144.....	.....	150.00

State Line Supply Co.

HOT ROLLED SHEETS

Pickled & Oiled
Conforms to A569

Thickness		Wt./Sq. Ft.	Est. Weight
16GA	48 x 96	2.500	80.00
	48 x 120 . . . . .	. . . . .	100.00
	60 x 120 . . . . .	. . . . .	125.00
14GA	36 x 96	3.125	75.00
	48 x 96 . . . . .	. . . . .	100.00
	48 x 120 . . . . .	. . . . .	125.00
	60 x 120 . . . . .	. . . . .	156.24
	72 x 96 . . . . .	. . . . .	150.00
12GA	48 x 96	4.375	140.00
	48 x 120 . . . . .	. . . . .	175.05
	48 x 144 . . . . .	. . . . .	210.00
	60 x 120 . . . . .	. . . . .	218.80
	72 x 120 . . . . .	. . . . .	262.50
11GA	48 x 96	5.000	160.00
	48 x 120 . . . . .	. . . . .	200.00
	48 x 144 . . . . .	. . . . .	240.00
	60 x 120 . . . . .	. . . . .	250.00
	72 x 120 . . . . .	. . . . .	300.00
10GA	48 x 96	5.625	180.00
	48 x 120 . . . . .	. . . . .	225.00
	60 x 96 . . . . .	. . . . .	225.00
	60 x 120 . . . . .	. . . . .	281.30
	60 x 144 . . . . .	. . . . .	337.50
	72 x 96 . . . . .	. . . . .	270.05
	72 x 120 . . . . .	. . . . .	337.50
7GA	48 x 48	7.500	120.00
	48 x 96 . . . . .	. . . . .	240.03
	48 x 120 . . . . .	. . . . .	300.00
	60 x 96 . . . . .	. . . . .	300.00
	60 x 120 . . . . .	. . . . .	375.00

HOT ROLLED PLATES

Pickled & Oiled

Thickness		Wt./Sq. Ft.	Est. Weight
3/16	48 x 96	7.651	244.83
	48 x 120 . . . . .	. . . . .	306.00
	60 x 120 . . . . .	. . . . .	382.55
1/4	36 x 96	10.200	244.80
	48 x 96 . . . . .	. . . . .	326.40
	48 x 120 . . . . .	. . . . .	408.00
	60 x 96 . . . . .	. . . . .	408.00
	60 x 120 . . . . .	. . . . .	510.00
	60 x 144 . . . . .	. . . . .	612.00
3/8	48 x 96	15.310	490.00
	48 x 120 . . . . .	. . . . .	612.00

1-800-333-7572

State Line Supply Co.

GALVANIZED SHEETS

Conforms to A653
10 to 22ga G-90 coating
24 to 28ga G-60 coating

Thickness	Size	Wt./Sq. Foot	Est. Weight
10 GA	48 x 96	5.782	185.0
	48 x 120 . . . . .	. . . . .	231.2
12 GA	48 x 96	4.533	145.0
	48 x 120 . . . . .	. . . . .	181.2
14 GA	48 x 96	3.282	105.0
	48 x 120 . . . . .	. . . . .	131.2
16 GA	48 x 96	2.657	85.0
	48 x 120 . . . . .	. . . . .	106.4
	60 x 96 . . . . .	. . . . .	106.2
	60 x 120 . . . . .	. . . . .	132.8
18 GA	36 x 96	2.156	51.8
	48 x 96 . . . . .	. . . . .	69.0
	48 x 120 . . . . .	. . . . .	86.2
	60 x 120 . . . . .	. . . . .	107.8
20 GA	36 x 96	1.656	39.8
	48 x 96 . . . . .	. . . . .	53.0
	48 x 120 . . . . .	. . . . .	66.2
	60 x 120 . . . . .	. . . . .	82.8
22 GA	36 x 96	1.407	33.8
	48 x 96 . . . . .	. . . . .	45.0
24 GA	36 x 96	1.156	27.8
	48 x 96 . . . . .	. . . . .	37.0
	48 x 120 . . . . .	. . . . .	46.2
26 GA	36 x 96 . . . . .	.906	21.8
	48 x 96 . . . . .	. . . . .	29.0
	48 x 120 . . . . .	. . . . .	36.2
28 GA	36 x 96 . . . . .	.780	18.8
	48 x 120 . . . . .	. . . . .	31.2

COLD ROLLED SHEET - CQ

Conforms to ASTM A-366

Thickness	Size	Wt/ Sq. Ft.	Est. Weight
14 GA	48 x 96	3.125	100.0
	48 x 120 . . . . .	. . . . .	125.0
16 GA	48 x 96	2.500	80.0
	48 x 120 . . . . .	. . . . .	100.0
18 GA	48 x 90.5	2.000	60.3
	48 x 96 . . . . .	. . . . .	64.0
	48 x 120 . . . . .	. . . . .	80.0
20 GA	48 x 96	1.500	48.0
22 GA	48 x 96	1.250	40.0
24 GA	36 x 120 . . . . .	. . . . .	32.0

PIPE FITTINGS & VALVES

WELD FITTINGS

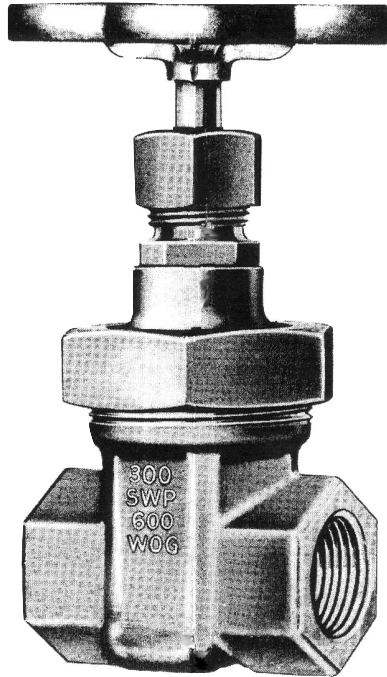
Ells
Tees
Reducers
Weld Neck Flanges
Socket Weld Flanges
Blind Flanges

MALLABLE FITTINGS

Standard & Xhvy
Black and Galvanized

FORGED STEEL FITTINGS

2000 LB & 3000 LB
Socket Weld
Threaded
PVC & CPVC



VALVES

Gate
Globe
Ball
Check
Flanged
Cast Steel
Bronze
All Classes

PIPE NIPPLES

Standard & Xhvy
Black and Galvanized
Seamless
Copper
Type L, M, K
Fittings

**CALL FOR PRICE & AVAILABILITY
INVENTORY TOO LARGE TO PRINT!**

800-333-7572

ABRASION RESISTANT

AR-200

Thickness	Size	Wt./Sq. Foot	Est. Weight
10 GA	48 x 120	5.620.....	225.0
	60 x 120 .....	.....	281.3
3/16	48 x 120	7.650.....	306.0
	48 x 144 .....	.....	367.2
	60 x 120 .....	.....	382.5
1/4	48 x 120	10.200.....	408.0
	48 x 144 .....	.....	489.6
	60 x 120 .....	.....	510.5
3/8	60 x 120	15.300.....	816.0
1/2	48 x 120	20.300.....	816.0
3/4	48 x 96.....	30.590.....	979.0

HIGH STRENGTH

Grade 50

Thickness	Size	Wt./Sq. Foot	Est. Weight
12 GA	48 x 96.....	4.375.....	140.0
	48 x 120 .....	.....	175.0
	60 x 120 .....	.....	218.8
	60 x 144 .....	.....	262.5
11 GA	60 x 96	5.001.....	200.0
	60 x 120 .....	.....	250.0
10 GA	48 x 96 .....	.....	180.0
	48 x 120	5.626.....	225.0
	60 x 120 .....	.....	281.3
	60 x 144 .....	.....	337.5
3/16	48 x 96.....	7.651.....	244.8
	48 x 120 .....	.....	306.0
	48 x 144 .....	.....	367.2
	60 x 96 .....	.....	306.0
	60 x 120 .....	.....	382.5
	60 x 144 .....	.....	459.0
	72 x 120 .....	.....	459.0
1/4	48 x 96.....	10.201.....	326.0
	48 x 120 .....	.....	408.0
	60 x 96 .....	.....	408.0
	60 x 120 .....	.....	510.5
	60 x 144 .....	.....	612.0
	72 x 120 .....	.....	612.0
	72 x 240 .....	.....	1224.0
3/8	48 x 96	15.313.....	490.0
	48 x 120 .....	.....	612.0
	60 x 96 .....	.....	611.0
	72 x 120 .....	.....	918.0
1/2	48 x 96	20.376.....	652.0
	60 x 120 .....	.....	1020.0
	72 x 120 .....	.....	1224.0
3/4	60 x 120 .....	.....	1530.0
	72 x 120 .....	.....	1836.0
1	60 x 120 .....	.....	2040.0
1-1/2	60 x 120 .....	.....	3060.0

HIGH STRENGTH

PLATE T-1

Conforms to ASTM A-514 Grade B

Thickness	Size	Wt./Sq. Foot	Est. Weight
1/4	96 x 120	10.21	816.8
3/8	96 x 120	15.32	1225.6
1/2	96 x 120	20.40	1020.0
1	48 x 120	40.80	2040.0

ABRASION RESISTANT

AR 400

Thickness	Size	Wt./Sq. Foot	Est. Weight
3/16	72 x 120	7.66	459.6
1/4	96 x 120	10.21	816.8
3/8	72 x 120	15.32	919.2
1/2	72 x 120	20.42	1225.2

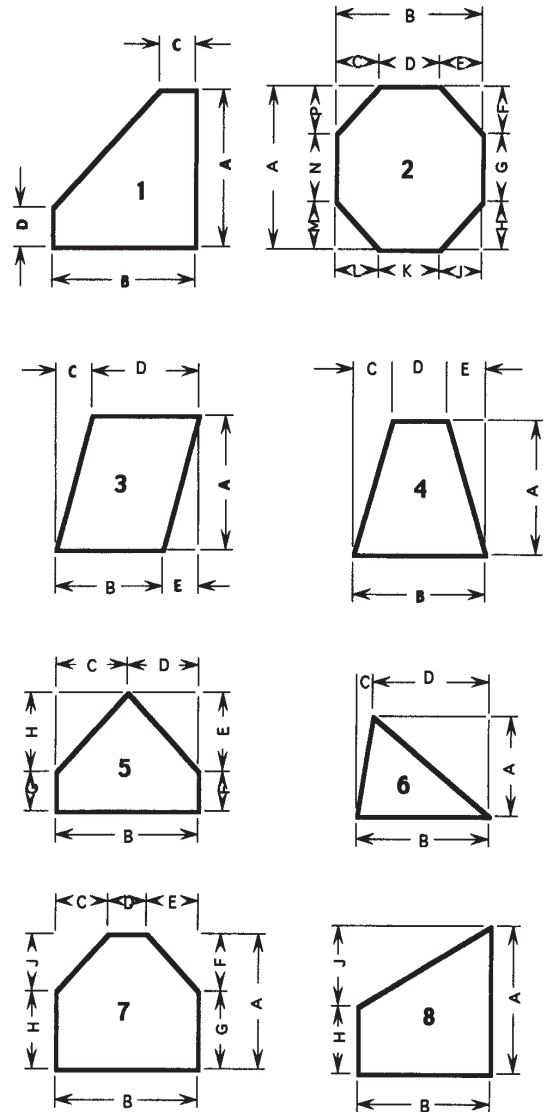
**SAFETY FLOOR PLATE
(Deck Plate)**

Conforms to ASTM A-786

Thickness	Med. Pattern	Wt./Sq.Ft.	Est. Weight
14 GA	48 x 96.....	3.75	120.00
	48 x 120 .....	.....	150.00
	48 x 144 .....	.....	180.00
12 GA	48 x 96.....	5.25	168.00
	48 x 120 .....	.....	210.00
	60 x 96 .....	.....	210.00
1/8"	60 x 120 .....	.....	262.50
	60 x 144 .....	.....	315.01
	48 x 96.....	6.15	196.80
1/8"	48 x 120 .....	.....	246.00
	48 x 144 .....	.....	295.20
	60 x 96.....	.....	246.00
1/8"	60 x 120 .....	.....	307.50
	60 x 144 .....	.....	369.01
	72 x 96.....	.....	295.20
3/16"	72 x 120 .....	.....	369.00
	48 x 96.....	8.70	278.40
	48 x 120 .....	.....	348.00
1/4"	60 x 96 .....	.....	348.00
	60 x 120 .....	.....	435.00
	72 x 96.....	.....	417.60
1/4"	72 x 120 .....	.....	522.00
	48 x 96.....	11.25.....	360.00
	48 x 120 .....	.....	450.00
1/4"	60 x 96.....	.....	450.00
	60 x 120 .....	.....	562.50
	72 x 96.....	.....	540.00
3/8"	72 x 120 .....	.....	675.00
	48 x 96.....	16.37.....	523.84
	48 x 120 .....	.....	654.80
1/2"	60 x 120 .....	.....	818.50
	48 x 96.....	21.47.....	687.04
	48 x 120 .....	.....	858.80

SHEAR CUT SHAPES

Schematic method for describing shear cut shapes. Refer to sketch number and dimensions when ordering.

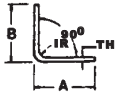


**FORMING DIAGRAMS FOR
SHEET & PLATE**

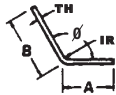
Notes:

Refer to sketch number and dimensions when ordering. Indicate degree of angle.

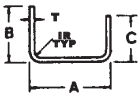
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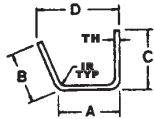
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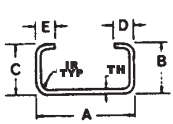
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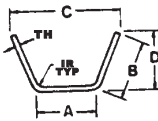
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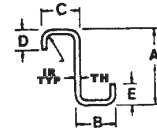
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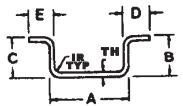
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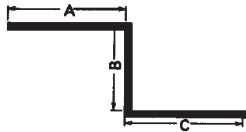
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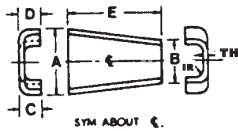
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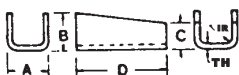
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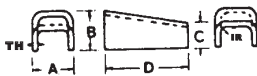
12



13



14



REINFORCING BARS

Bending Service By Request
Available In

Metric Grades 300 & 420,
Grade 40, 60, No Grade

Weldable grades available upon request

Stock 20', 40', 60', and cut to size

2-1/2 to 3 Ton Bundles

Conforms to ASTM A615

Imperial Size	Metric Size	Diam/In.	#/Ft.	20' piece
3	10	0.375	0.376	7.52
4	13	0.500	0.668	13.36
5	16	0.625	1.043	20.86
6	19	0.750	1.502	30.04
7	22	0.875	2.044	40.88
8	25	1.000	2.670	53.40
9	29	1.128	3.400	68.00
10	32	1.270	4.303	86.06
11	36	1.410	5.313	106.26

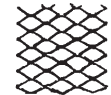
Loop End Tie Wire 16 ga. 5000 pc./coils
Lengths Available: 4-1/2", 5", 5-1/2", 6", 7", 8"
Tying Tools For Loop End Tire Wire Available

**FLATTENED
EXPANDED METAL**
4' x 8'



Size	L.W.O.	S.W.O.	Weight
1/4" #20 F	0.72	0.13	26.22
1/4" #18 F	0.72	0.13	34.56
1/2" #18 F	1.00	0.31	21.12
1/2" #16 F	1.00	0.31	26.24
1/2" #13 F	1.00	0.38	44.80
3/4" #16 F	1.78	0.72	16.32
3/4" #14 F	1.75	0.72	20.16
3/4" #13 F	1.72	0.72	24.00
3/4" #9 F (10 ga.)*	1.63	0.56	54.72
1-1/2" #16 F	2.59	1.00	12.16
1-1/2" #13 F	2.72	1.09	18.24
1-1/2" #9 (10 ga.)*	2.72	1.09	36.48
1-1/2" #6 F	3.20	1.33	75.20

**REGULAR
EXPANDED METAL**
4' x 8'



Style	L.W.O.	S.W.O.	Weight
1/4" #18	0.67	0.16	36.48
1/2" #18	0.94	0.42	22.40
1/2" #16	0.90	0.38	26.56
1/2" #13	0.88	0.38	47.04
3/4" #16	1.69	0.78	17.08
3/4" #13	1.63	0.80	25.60
3/4" #9 (10 ga.)*	1.52	0.66	57.60
1-1/2" #16	2.61	1.25	12.80
1-1/2" #13	2.55	1.23	19.20
1-1/2" #9 (10 ga.)	2.44	1.14	38.40
1-1/2" #6	2.28	1.03	80.00

* Also Available in 4' x 10' Sheets

L.W.O. = Long Way Opening Inside to Inside.

S.W.O. = Short Way Opening Inside to Inside.

= Approximate Gauge.

Stainless Sizes Upon Request.

WALKWAY GRATING

4' x 8'

Size	Thickness	L.W.O.	S.W.O.	Weight
3.0#	187	3.44	0.940	96.00
3.14#	250	4.88	1.625	100.48
4.0#	215	3.44	0.940	128.00
4.27#	250	2.88	1.000	136.64
5.0#	250	3.38	0.813	160.00
6.25#	312	3.38	0.813	200.00
7.0#	312	3.38	0.813	224.00

CATWALK GRATING

10' x 2'

Size	Thickness	L.W.O.	S.W.O.	Weight
3.0#	187	3.44	0.940	60.00



**DECK SPAN - 12'
GALVANIZED**

Width	Height	Gauge	Wt./Length
4.75	1.5"	12	38.4
4.75	1.5"	14	27.6
7	1.5"	12	49.4
7	1.5"	14	36.0
7	2.0"	12	54.0
7	2.0"	14	38.4
9.5	1.5"	12	60.0
9.5	1.5"	14	43.2
9.5	2.0"	12	64.8
9.5	2.0"	14	45.6
11.75	1.5"	12	70.8
11.75	1.5"	14	50.4
11.75	2.0"	12	74.4
11.75	2.0"	14	52.8
18.75	1.5"	12	102.0
18.75	2.0"	12	106.8
18.75	2.0"	14	75.6
24	2.0"	12	124.8
24	2.0"	14	88.8

1-800-333-7572

**OPEN STEEL FLOOR GRATING
BAR GRATE
2' x 20' + 3' x 20'**

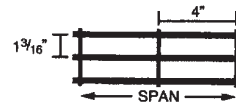
WEIGHT IN LBS. PER SQ. FT.

Bearing Bars	Type 19-W-4	
3/4 x 1/8	3.99	Note: We can also order 19-W-2, 15-W-4, and 15-W-2 upon request.
3/4 x 3/16	5.67	
1 x 1/8	5.15*	
1 x 3/16	7.35*	
1-1/4 x 1/8	6.20	
1-1/4 x 3/16	8.70*	
1-1/2 x 1/8	7.35	
1-1/2 x 3/16	10.94*	

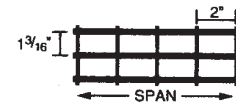
* SMOOTH & PAINTED BLACK

OPEN STEEL FLOOR GRATING

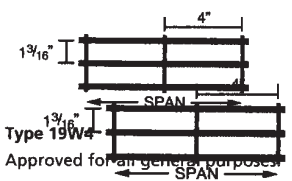
Conforms to Specifications
RR-G661a and MIL-G-1958



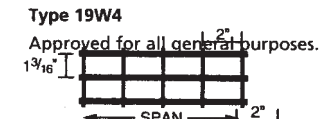
Type 19W4
Approved for all general purposes.



Type 19W2
Same as Type 19W4 but close cross bars for conditions where most steel area is required.



Type 19W4
Approved for all general purposes.



Type 19W2
Same as Type 19W4 but close cross bars for conditions where most steel area is required.

When Ordering GRATING, Specify:

Type of GRATING

Size of BEARING BARS (DEPTH & WIDTH)

Span (Direction of Bearing Bars)

Dimensions of Area

Painted or Galvanized, Smooth or Serrated.

(Rods run the width, flat bars run the length)

THREADED ROD
NATIONAL COARSE THREADS - Grade 2
Stock Lengths - 12' Plain Finish

Size	Threads/Inch	Wt. Per Ft.
1/4	20	0.125
5/16	18	0.200
3/8	16	0.290
7/16	14	0.400
1/2	13	0.530
5/8	11	0.840
3/4	10	1.234
7/8	9	1.700
1	8	2.300
1-1/4	7	3.400

THREADED ROD
NATIONAL COARSE THREADS - Grade 2
Zinc Plated - 12' Stock Lengths

Size	Threads/Inch	Wt. Per Ft.
1/4	20	0.125
5/16	18	0.200
3/8	16	0.290
7/16	14	0.400
1/2	13	0.530
5/8	11	0.840
3/4	10	1.234
7/8	9	1.700
1	8	2.300
1-1/4	7	3.400
1-1/2	6	5.100

RAIL CAP
HAND RAIL - 20'
Hot Rolled Mild Steel



Width in Inches	Weight Per Ft. in Lbs.	Weight Per Stock Length
1-3/4	1.27	25.4

STAINLESS STEEL
CHROME-NICKEL, NON-HARDENING,
AUSTENITIC (NON-MAGNETIC)

304 (S30400). The most widely used of the stainless and heat resisting steels. Offers good corrosion resistance to many chemical corrosives as well as industrial atmospheres. Has very good formability and can be readily welded by all common methods.

304 L (S30403). Extra low carbon variation of T-304 avoids harmful carbide precipitation due to welding. Same corrosion resistance as T-304. Slightly lower mechanical properties than T-304.

316 (S31600). Better corrosion and pitting resistance as well as higher strength at elevated temperatures than T-304. Used for pumps, valves, textile and chemical equipment, pulp & paper and marine applications.

316 L (S31603). Extra low carbon variation of T-316 to avoid carbide precipitation due to welding. Same excellent corrosion resistance.

State Line Supply Co. is a distributor of Top Line Process Equipment Company products; including a full line of stainless steel flow control equipment for the food, dairy, beverage, pharmaceutical, biotech, personal care, and fine chemical industries.

**H.R.A.P. STAINLESS TYPE 304
ANGLES - Bar Size
20' Random Length**

Conforms to ASTM A276, A479

Size in Inches	Wt. Per Foot Lbs.	Estimate 20' Bar
3/4 x 3/4 x 1/8	0.59	11.80
1 x 1 x 1/8	0.80	16.00
3/16	1.16	23.20
1/4	1.49	29.80
1-1/4 x 1-1/4 x 1/8	1.01	20.20
3/16	1.48	29.60
1/4	1.92	38.40
1-1/2 x 1-1/2 x 1/8	1.23	24.60
3/16	1.80	36.00
1/4	2.34	46.80
2 x 2 x 1/8	1.65	33.00
3/16	2.44	48.80
1/4	3.19	63.80
3/8	4.70	94.00
2-1/2 x 2-1/2 x 3/16	3.07	61.40
1/4	4.10	82.00
3 x 3 x 3/16	3.07	61.40
1/4	4.90	98.00
3/8	7.20	144.00
4 x 4 x 1/4	6.60	132.00
3/8	9.80	196.00

Larger Sizes and Other Grades Are Available
Formed Stainless Angles and Channels
Made To Order

**STAINLESS STEEL FLATS H.R.A.P.
TYPE 304 - 12' Random Length**

Size in Inches	Wt. Per Foot Lbs.	Estimated 12' Wt.
1/8 x		
1/2	0.213	2.56
3/4	0.319	3.83
1	0.425	5.10
1-1/4	0.531	6.37
1-1/2	0.638	7.66
2	0.850	10.20
2-1/4	0.975	11.70
2-1/2	1.060	12.72
3	1.280	15.36
4	1.700	20.40

**STAINLESS STEEL FLATS H.R.A.P.
TYPE 304 - 12' Random Length**

Size in Inches	Wt. Per Foot Lbs.	Estimated 12' Wt.
3/16 x		
1/2	0.319	3.83
3/4	0.478	5.74
1	0.638	7.66
1-1/4	0.797	9.56
1-1/2	0.956	11.47
2	1.275	15.30
2-1/2	1.594	19.13
3	1.913	22.96
3-1/2	2.230	26.76
4	2.560	30.72
1/4 x		
3/8	0.318	3.82
1/2	0.425	5.10
3/4	0.638	7.66
1	0.850	10.20
1-1/4	1.063	12.76
1-1/2	1.275	15.30
2	1.700	20.40
2-1/2	2.125	25.50
3	2.550	30.60
3-1/2	2.975	35.70
4	3.400	40.80
5	4.250	51.00
6	5.100	61.20
3/8 x		
1/2	0.638	7.66
3/4	0.956	11.49
1	1.275	15.30
1-1/4	1.594	19.13
1-1/2	1.913	22.96
1-3/4	2.233	26.80
2	2.550	30.60
2-1/2	3.188	38.26
3	3.825	45.90
3-1/2	4.467	53.60
4	5.100	61.20
5	6.381	76.57
6	7.658	91.89
8	10.200	122.40
1/2 x		
3/4	1.276	15.30
1	1.700	20.40
1-1/4	2.125	25.50
1-1/2	2.550	30.60
2	3.400	40.80
2-1/2	4.250	51.00
3	5.100	61.20
3-1/2	5.950	71.40
4	6.800	81.60
5	8.499	101.99
6	10.200	122.60
8	13.600	163.20

**STAINLESS STEEL FLATS H.R.A.P.
TYPE 304 - 12' Random Length**

Size in Inches	Wt. Per Foot Lbs.	Estimated 12' Wt.
5/8 x		
1	2.130	25.56
3/4 x		
1	2.550	30.60
1-1/4	3.188	38.26
1-1/2	3.826	45.90
2	5.100	61.20
2-1/2	6.379	76.55
3	7.650	91.80
4	10.200	122.40
6	15.310	183.70
1 x		
1-1/2	5.105	61.26
2	6.800	81.60
3	10.200	122.40
4	13.600	163.20

Other Sizes Upon Request

**STAINLESS STEEL SQUARES
TYPE 304
12' Random Length**

Size in Inches	Weight Per Ft. in Lbs.	Weight of 12' Bar
3/16	0.12	1.44
1/4	0.23	2.56
5/16	0.33	3.98
3/8	0.48	5.74
1/2	0.85	10.20
5/8	1.33	15.96
3/4	1.91	22.92
1	3.40	40.80
1-1/4	5.31	63.72
1-1/2	7.65	91.80
2	13.60	163.20

1-800-333-7572

**STAINLESS STEEL ROUNDS
TYPE 304
12' Random Length**

Size in Inches	Weight Per Ft. in Lbs.	Weight of 12' Bar
1/8	0.042	0.504
3/16	0.094	1.130
1/4	0.167	2.000
5/16	0.261	3.130
3/8	0.376	4.510
7/16	0.511	6.130
1/2	0.668	8.020
9/16	0.845	10.140
5/8	1.040	12.480
11/16	1.260	15.120
3/4	1.500	18.000
7/8	2.040	24.480
15/16	2.349	28.200
1	2.670	32.040
1-1/16	3.010	36.120
1-1/8	3.380	40.560
1-3/16	3.770	45.240
1-1/4	4.170	50.040
1-3/8	5.050	60.600
1-7/16	5.583	67.000
1-1/2	6.010	72.120
1-5/8	7.050	84.600
1-5/8 T416	7.050	84.600
1-11/16	7.600	91.250
1-3/4	8.180	98.160
1-15/16	10.083	121.000
2	10.680	128.160
2-1/4	13.520	162.240
2-1/2	16.690	200.280

**STAINLESS STEEL ROUNDS
TYPE 303
12' Random Length**

Size in Inches	Weight Per Ft. in Lbs.	Weight of 12' Bar
5/16	0.261	3.130
3/8	0.376	4.510
1/2	0.668	8.020
5/8	1.040	12.480
7/8	2.040	24.480
1	2.670	32.040
1-1/4	4.170	50.040

**TYPE 304
STAINLESS STEEL SHEET**

No. 2B Finish - Cold Rolled,
Annealed - Standard Flat Sheet Sizes

QQ-S-766 ASTM A-240

Size in Inches	Lbs. Per Sq. Foot	Estimated Wt. Per Sheet
10 GA (.135)		
48 x 96	5.67	181.44
48 x 120	5.67	226.80
60 x 120	5.67	283.50
12 GA (.105)		
48 x 96	4.41	141.12
48 x 120	4.41	176.40
60 x 120	4.41	220.20
14 GA (.075)		
48 x 96	3.15	100.80
48 x 120	3.15	126.00
60 x 120	3.15	157.20
16 GA (.060)		
48 x 96	2.52	80.64
48 x 120	2.52	100.80
60 x 120	2.52	126.00
18 GA (.048)		
48 x 96	2.02	64.64
48 x 120	2.02	80.80
20 GA (.036)		
48 x 96	1.51	48.32
48 x 120	1.51	60.40
22 GA (.031)		
48 x 96	1.26	40.32
48 x 120	1.26	50.40
24 GA (.024)		
48 x 120	1.01	40.40

STAINLESS STEEL PLATE

No. 1 Finish - Hot Rolled,
Annealed and Pickled

Size in Inches	Lbs. Per Sq. Foot	Estimated Wt. Per Sheet
----------------	-------------------	-------------------------

1/4 x

48 x 96	11.162	357.18
48 x 120	11.162	446.48

3/8 x

48 x 96	16.496	527.87
48 x 120	16.496	659.84

1/2 x

48 x 96	21.663	693.00
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The shearing capacity of
our 3/4" plate shear decreases
to 1/2" x 10' when cutting
stainless steel.

**STAINLESS FLOOR PLATE 304
ASTM A793 PATTERN B**

Size in Inches	Lbs. Per Sq. Foot	Estimated Wt. Per Sheet
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3/16

48 X 96	8.698	278.30
48 X 120		347.90

1/4

48 X 96	11.251	360.00
48 X 120		450.00

STAINLESS TUBING
304 As Welded
20' Random

Size O.D.	Gauge Thickness	Wt. Per Foot
3/4 x 3/4	16	0.60
3/4 x 3/4	11	1.03
1 x 1	16	0.83
1 x 1	14	1.03
1 x 1	11	1.44
1-1/4 x 1-1/4	16	1.05
1-1/4 x 1-1/4	14	1.37
1-1/4 x 1-1/4	11	1.84
1-1/2 x 1-1/2	16	1.27
1-1/2 x 1-1/2	14	1.60
1-1/2 x 1-1/2	11	2.25
1-1/2 x 1-1/2	3/16	3.23
2 x 1	16	1.27
2 x 1	11	2.25
2 x 1-1/2	11	2.66
2 x 2	16	1.71
2 x 2	14	2.02
2 x 2	11	3.07
2 x 2	3/16	4.46
2-1/2 x 2-1/2	11	3.90
2-1/2 x 2-1/2	3/16	4.68
3 x 1-1/2	11	3.50
3 x 2	11	3.89
3 x 3	11	4.70
4 x 2	11	4.75
4 x 2	3/16	6.90
4 x 4	11	6.26

STAINLESS STEEL PIPE
Sch. 40, Plain End
#304
21' Random Lengths

Size	OD	Wall	Wt./Ft.
1/8"	0.405	0.068	0.24
1/4"	0.540	0.088	0.43
3/8"	0.675	0.091	0.57
1/2"	0.840	0.109	0.86
3/4"	1.050	0.113	1.14
1"	1.315	0.133	1.69
1-1/4"	1.660	0.140	2.29
1-1/2"	1.900	0.145	2.74
2"	2.375	0.154	3.69
2-1/2"	2.875	0.203	5.81
3"	3.500	0.216	7.60

STAINLESS STEEL PIPE
Sch. 80 - #304
21' Random Lengths

Size	OD	Wall	Wt./Ft.
1/4"	0.540	0.119	0.54
3/8"	0.675	0.126	0.75
1/2"	0.840	0.147	1.10
3/4"	1.050	0.154	1.49
1"	1.315	0.179	2.19
1-1/4"	1.660	0.191	3.03
1-1/2"	1.900	0.200	3.67
2"	2.375	0.218	5.07

ALUMINUM

3003-H14 - General purpose alloy of moderate strength. Easily formed, welded, or brazed. Not heat treatable. Bendable - bright finish.

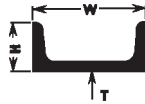
5052-H32 This is the highest strength alloy of the more common non-heat treatable grades. Good resistance to marine atmosphere and salt water corrosion. Excellent workability.

6061-T6 - A heat treatable grade used in a wide variety of products from truck frames to screw machine products and structural components. A liberal bending radius is required when forming. Non-Bendable, dull finish.

**ANGLES - STRUCTURAL ALUMINUM
6061 T6
Rounded Toes and Fillet**

Size in Inches	Weight Per Foot Lbs.	Estimate 25' Bar
1/2 x 1/2 x 1/8 6063 16'	0.128	3.20
3/4 x 3/4 x 1/8	0.201	5.03
1 x 1 x 1/8	0.275	6.88
1 x 1 x 3/16	0.400	10.00
1 x 1 x 1/4	0.514	12.85
1-1/4 x 1-1/4 x 1/8	0.343	8.58
1-1/4 x 1-1/4 x 3/16	0.510	12.75
1-1/4 x 1-1/4 x 1/4	0.656	16.40
1-1/2 x 1-1/2 x 1/8	0.423	10.58
1-1/2 x 1-1/2 x 3/16	0.619	15.48
1-1/2 x 1-1/2 x 1/4	0.809	20.23
1-3/4 x 1-3/4 x 1/4	0.956	23.90
2 x 1-1/2 x 1/8	0.495	12.38
2 x 2 x 1/8	0.577	14.43
2 x 2 x 3/16	0.850	21.25
2 x 2 x 1/4	1.110	27.75
2 x 2 x 3/8	1.610	40.25
2-1/2 x 2-1/2 x 3/16	1.070	26.75
2-1/2 x 2-1/2 x 1/4	1.400	35.00
3 x 2 x 3/16	1.070	26.75
3 x 2 x 1/4	1.404	35.10
3 x 3 x 1/4	1.680	42.00
3 x 3 x 3/8	2.470	61.75
3 x 3 x 1/2	3.226	80.65
3-1/2 x 3-1/2 x 1/4	2.040	51.00
4 x 3 x 1/4	1.990	49.75
4 x 4 x 1/4	2.280	57.00
4 x 4 x 3/8	3.369	84.25
6 x 6 x 3/8	5.120	128.00

**CHANNELS STRUCTURAL
ALUMINUM
American Standard
6061 -T6**



Conforms to ASTM B308

Web Width (W)	Height (H)	Web Thickness (T)	Wt./ Linear Foot	Wt. Per 25' Length
3	1.410	.170	1.42	35.50
4	1.647	.247	2.16	54.00
5	1.885	.325	3.11	77.70
6	1.920	.200	2.83	70.75
8	2.290	.250	4.25	106.25
10	2.886	.500	8.64	216.00

6061 Associated

3	1.750	.170	1.60	40.00
4	2.000	.150	1.74	43.50
7	3.50	.210	4.72	118.00

**CHANNELS STRUCTURAL
ALUMINUM
6063-T52**



Web Width (W)	Height (H)	Web Thickness (T)	Wt./ Linear Foot	Wt. Per 25' Length
2	1	1/8	.563	9.01

**ALUMINUM RECTANGLES
6061-T6511
Lengths 12'**



Size in Inches	Weight Per Foot Lbs.	Weight of 12' Length
----------------	----------------------	----------------------

1/8 x

1/2	0.074	0.89
3/4	0.110	1.32
1	0.147	1.77
1-1/4	0.184	2.21
1-1/2	0.221	2.65
2	0.295	3.53

ALUMINUM RECTANGLES -12'

Size in Inches	Weight Per Foot Lbs.	Weight of 12' Length
----------------	----------------------	----------------------

3/16 x

1/2	0.110	1.32
3/4	0.166	1.99
1	0.221	2.65
1-1/4	0.276	3.31
1-1/2	0.331	3.97
2	0.442	5.30
2-1/2	0.552	6.62
3	0.663	7.95

1/4 x

1/2	0.147	1.77
3/4	0.221	2.65
1	0.295	3.53
1-1/4	0.368	4.42
1-1/2	0.442	5.30
1-3/4	0.516	6.18
2	0.589	7.07
2-1/2	0.736	8.83
3	0.883	10.60
3-1/2	1.010	12.12
4	1.180	14.10
5	1.500	18.00
6	1.800	21.60
8	2.400	28.80

5/16 x

1-1/2	0.552	6.62
-------	-------	------

3/8 x

1/2	0.221	2.65
3/4	0.331	3.97
1	0.442	5.30
1-1/4	0.552	6.62
1-1/2	0.662	7.95
1-3/4	0.786	9.43
2	0.883	10.60
2-1/2	1.100	13.20
3	1.325	15.90
3-1/2	1.542	18.50
4	1.766	21.20
5	2.250	26.40
6	2.640	31.68
8	3.520	42.24
10	4.500	54.00

ALUMINUM RECTANGLES -12'

Size in Inches	Weight Per Foot Lbs.	Weight of 12' Length
<u>1/2 x</u>		
3/4	0.442	5.30
1	0.589	7.07
1-1/4	0.736	8.83
1-1/2	0.883	10.60
2	1.175	14.10
2-1/2	1.475	17.70
3	1.766	21.20
3-1/2	2.058	24.70
4	2.350	28.20
5	2.940	35.28
6	3.520	42.24
8	4.700	56.40

5/8 x

1	0.734	8.81
2	1.470	17.64
2-1/2	1.836	22.04
6	4.410	52.92

3/4 x

1	0.883	10.60
1-1/4	1.100	13.20
1-1/2	1.325	15.90
2	1.766	21.20
2-1/2	2.208	26.50
3	2.650	31.80
4	3.533	42.40
5	4.399	52.79
6	5.300	63.60

1 x

1-1/4	1.475	17.70
1-1/2	1.766	21.20
2	2.350	28.20
2-1/2	2.937	35.30
3	3.533	42.40
4	4.709	56.50
6	7.067	84.80
8	9.400	112.80

1-1/4 x

2	3.000	36.00
4	5.880	70.56

1-1/2 x

2	3.533	42.36
2-1/2	4.409	52.90
3	5.290	63.48
4	7.050	84.60
5	8.817	105.81

2 x

4	9.580	115.00
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**ALUMINUM RECTANGLES -10'
3003**

1/8 x 3	0.534	5.34
3/16 x 4	0.884	8.84

**ALUMINUM RECTANGLES -12'
2024**

3 x 4	14.416	173.00
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**ALUMINUM SQUARE
Extruded**

Size	Type	Wt./Ft.	Wt./12'
1/4	6063-T-6511	0.074	...
3/8	6063-T-6511	0.166	2.00
1/2	6061-T-6511	0.294	3.52
9/16	6061-T-6511	0.379	4.55
5/8	6061-T-6511	0.459	5.51
3/4	6061-T-6511	0.661	7.92
1	6061-T-6511	1.175	14.00
1-1/4	6061-T-6511	1.838	22.00
1-1/2	6061-T-6511	2.646	31.70
1-3/4	6061-T-6511	3.600	43.20
2	6061-T-6511	4.700	56.00
3"	6061-T-6511	10.569	126.84

**ALUMINUM ROUNDS
6061-T6511**



Specifications: QQ-A-225/8, QQ-A-200/8

Size in Inches	Weight Per Foot Lbs.	Weight of 12' Length
3/16	0.032	0.380
1/4	0.058	0.694
5/16	0.090	1.080
3/8	0.131	1.560
7/16	0.177	2.120
1/2	0.231	2.770
9/16	0.304	3.650
5/8	0.361	4.340
3/4	0.520	6.240
7/8	0.708	8.500
1	0.925	11.100
1-1/8	1.170	14.000
1-1/4	1.450	17.400
1-1/2	2.083	25.000
1-3/4	2.940	35.280
2	3.666	44.000
2-1/2	5.775	69.300
3	8.499	102.000
4	14.750	177.000

1-800-333-7572

**ALUMINUM SHEET
5052-H32**

Thickness in Inches	Weight and Length	Estimated Wt. Lbs. Per Sheet
.032 (.456 lb. per sq. ft.)		
Approx.	48 x 96	14.6
21 GA	48 x 120	18.2
.040 (.570 lb. per sq. ft.)		
Approx.	48 x 96	18.2
19 GA	48 x 120	22.8
.050 (.713 lb. per sq. ft.)		
Approx.	48 x 96	22.8
18 GA	48 x 120	28.5
.063 (.898 lb. per sq. ft.)		
Approx.	48 x 96	28.7
16 GA	48 x 120	35.9
.080 (1.14 lb. per sq. ft.)		
Approx.	48 x 96	36.5
14 GA	48 x 120	46.6
.090 (1.28 lb. per sq. ft.)		
Approx.	48 x 96	40.9
13 GA	48 x 120	51.2
100 (1.43 lb. per sq. ft.)		
Approx.	48 x 96	45.7
12 GA		
.125 (1.78 lb. per sq. ft.)		
Approx.	48 x 96	57.0
11 GA	48 x 120	71.2
	60 x 120	89.0
	60 x 144	106.8
.190 (2.70 lb. per sq. ft.)		
Approx.	48 x 120	108.0
7 GA or 3/16"	60 x 120	135.0
	60 x 144	162.0

**6061-T651 ALUMINUM PLATE
Heat Treated & Aged,
Stress-Relieved
Specifications: QQ-A-250/11, AMS 4027**

Thickness in Inches	Weight and Length	Estimated Wt. Lbs. Per Sheet
.125 (1.77 lb. per sq. ft.)		
	48 x 144	84.7
.190 (2.71 lb. per sq. ft.)		
	48 x 144	130.0
.250 (3.53 lb. per sq. ft.)		
	48.5 x 144.5	171.8
.375 (5.29 lb. per sq. ft.)		
	48 x 144	254.0
.500 (7.06 lb. per sq. ft.)		
	48.5 x 144.5	343.6

**TOOLING PLATE
ALUMINUM CAST
MIC-6**

Thickness in Inches	Weight and Length	Estimated Wt. Lbs. Per Sheet
.250 (3.63 lb. per sq. ft.)		
	48 x 48	58.08
.375 (5.47 lb. per sq. ft.)		
	48 x 48	87.52
.500 (7.28 lb. per sq. ft.)		
	48 x 48	116.48

**3003 ALUMINUM
TREAD BRITE
DECK PLATE**



Conforms to ASTM B209

Thickness in Inches	Weight and Length	Estimated Wt. Lbs. Per Sheet
.100 (1.57 lb. per sq. ft.)		
	48 x 96	50.2
	48 x 192	100.5
	60 x 96	62.8
	60 x 192	125.6
.125 (1.90 lb. per sq. ft.)		
	48 x 96	60.8
	48 x 120	76.0
	48 x 192	122.9
	60 x 96	76.8
	60 x 120	95.0
	60 x 192	153.6
.188 (2.82 lb. per sq. ft.)		
	48 x 96	90.3
	48 x 192	180.5
	60 x 96	112.8
	60 x 120	141.0
	60 x 192	225.7

6061-T6 TREAD PLATE

Diamond Pattern

Specification: MIL-F-17132

Conforms to ASTM B632

Thickness in Inches	Weight and Length	Estimated Wt. Lbs. Per Sheet
.125 (2.00 lb. per sq. ft.)		
	48 x 96	64.0
	48 x 192	128.0
.188 (3.00 lb. per sq. ft.)		
	48 x 96	96.0
	48 x 192	192.0
.250 (3.90 lb. per sq. ft.)		
	48 x 96	125.0
	48 x 192	250.0

**ALUMINUM TUBING
STRUCTURAL - 6063-T52**

**Extruded
21'1" Lengths**



Size	Wall Thickness	Pounds Per Foot	Pounds Per 21'1" Length
3/4 x 3/4 x .125		0.376	7.93
1 x 1 x .062		0.280	5.91
1 x 1 x .125		0.526	11.10
1-1/4 x 1-1/4 x .125		0.674	14.22
1-1/2 x 1-1/2 x .125		0.826	17.43
2 x 1 x .125		0.826	17.43
2 x 2 x .125		1.130	23.84
2 x 2 x .187		1.630	34.47
2-1/2 x 2-1/2 x .125		1.423	30.00
3 x 2 x .125		1.399	29.50
3 x 3 x .187		2.530	53.36
3 x 3 x .250		3.300	69.50
4 x 2 x .125		1.689	35.63
4 x 4 x .125		2.330	49.12
4 x 4 x .250		4.500	94.90
5 x 2 x .125			

**6061 ALUMINUM PIPE
SCHEDULE 40
20' LENGTHS**

Size	OD	Wall	Wt./Ft.
1/2	0.840 .....	.109	0.294
3/4	1.050 .....	.113	0.391
1	1.315 .....	.133	0.581
1-1/4	1.660 .....	.140	0.785
1-1/2	1.900 .....	.145	0.939
2	2.375 .....	.154	1.263
2-1/2	2.875 .....	.203	2.000
3	3.500 .....	.216	2.620

**6061 ALUMINUM PIPE
SCHEDULE 80
20' LENGTHS**

Size	OD	Wall	Wt./Ft.
1	1.315	0.719 .....	.751
1-1/4	1.660	0.191	1.037

MATERIAL RETURN POLICY

MATERIAL RETURNS - No merchandise returns will be accepted without prior authorization in the form of a "Return Goods Authorization" issued by us. Customers must contact their inside salesperson for authorization. Material accepted as "return for credit", where no error on our part exists, will be subject to restocking charges.

Certain items, such as aluminum thin sheets, are so easily damaged in transit or in the customer's shop, that we do not accept returns.

RETURN GOODS - DEFECTIVE MATERIAL - in any case where a shipment proves to be unsuitable, it is understood the buyer will immediately discontinue its use and advise the seller of the facts. This will give the seller an opportunity to make a decision, so further loss may be prevented or minimized.

We limit our responsibility to replacement of the material. No consequential damages, charges for labor, tooling or time will be allowed.

If defective, the returned material must be accompanied by a "Return Goods Authorization".

RETURN GOODS - NOT DEFECTIVE - Customers are allowed a reasonable time for receipt and inspection of material shipped incorrectly. In the case of customer error, we will accept material returned for replacement, providing the return is made within a reasonable time from the delivery date, and our return goods procedure is followed. All returns except those due to our error, will be subject to a restocking charge.

However if the material was plated, polished, masked, or changed from a standard by cutting or sawing, the likelihood is that we cannot accept return. Any such goods must be handled by negotiations and purchase.

Return privileges do not apply in the case of extraordinary quantities or special ordered items obtained for a specific customer order.

QUOTATIONS- All price quotations are subject to change without notice, prior sale and, unless otherwise specified, are for immediate acceptance. All sales are made subject to material availability at time of order.

CONFIRMATION OF ORDERS - Every effort is made to ship verbal orders exactly as requested. However, when material is processed and/or shipped prior to receipt of a written confirming order, we cannot assume responsibility for any deviation from instructions or specifications contained on the confirming order.

Recommended Fabricating Practices for Cold Forming (Bend axis transverse (perpendicular) to rolling direction "across the grain")* Suggested inside Radii for various thicknesses expressed in terms of "t" where t=material thickness.

STEEL

A36 - 36,000 psi Minimum Yield Strength

Thru .250"	1t
.250 to .500"	1-1/2t
.500 to 1.00"	2t

Grade 50 - 50,000 psi Minimum Yield Strength (ASTM - A570, A572, A607, A935)

Thru .187"	1-1/2t
.187 to .229"	2t
.229 to .500"	2-1/2t

Grade 50 - Improved Formability - 50,000 psi minimum Yield Strength (ASTM - A656 T3, A715, A936)

Thru .500"	1t
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Grade 80 - 80,000 psi Minimum Yield Strength (ASTM - A656)

Thru .250"	2-1/2t
Over .250"	3t

AR200 - 70,000 psi Typical Yield Strength (No ASTM exists)

Thru .187"	1-1/2t
.187 to .229"	2t
.229 to .500"	2-1/2t

T1- 100,000 psi Minimum Yield Strength (ASTM - A514 Gr B)

AR200 - 155,000 psi Typical Yield Strength (No ASTM exists)

Thru .787"	3t (use 13.5t bottom die opening)
Over .787"	4t

ALUMINUM

3003 - H14

Thru .062"	1/2t
Over .062 to .188"	1t
Over .188 to .250"	1-1/2t
Over .250 to .500"	2t

5052 - H32

Thru .062"	1t
Over .062 to .375"	1-1/2t
Over .375 to .500"	2t

6061 - T6

Thru .031"	1t
Over .031 to .062"	1-1/2t
Over .062 to .125"	2-1/2t

*Larger minimum radii should be used for bending parallel to the rolling direction "with the grain".

**The radii listed are the minimum recommended for bending sheets and plates without fracturing in a standard press brake with air bend dies. Other types of bending operations may require larger radii or permit smaller radii. The minimum permissible radii will also vary with the design and conditions of the tooling.

**Weights and Tolerances
for Sheets**

per ASTM A568 Table 4 & 6

Gage No.	Dec. Equiv.	Toler. Range		Lbs. per Sq. Ft.
		HR, P&O	CR	
7	.1793	.1873 .1713	.1873 .1713	7.500
8	.1644	.1724 .1564	.1724 .1564	6.875
9	.1495	.1575 .1415	.1575 .1415	6.250
10	.1345	.1425 .1265	.1405 .1285	5.625
11	.1196	.1276 .1116	.1256 .1136	5.000
12	.1046	.1126 .0966	.1106 .0986	4.375
13	.0897	.0967 .0827	.0947 .0847	3.750
14	.0747	.0817 .0677	.0797 .0697	3.125
15	.0673	.0733 .0613	.0723 .0623	2.813
16	.0598	.0658 .0538	.0648 .0548	2.500
17	.0538	.0598 .0478	.0578 .0498	2.250
18	.0478	.0528 .0428	.0518 .0438	2.000
19	.0418		.0458 .0378	1.750
20	.0359		.0389 .0329	1.500
21	.0329		.0359 .0299	1.375
22	.0299		.0329 .0269	1.250
23	.0269		.0299 .0239	1.125
24	.0239		.0269 .0209	1.000
25	.0209		.0239 .0179	.875
26	.0179		.0199 .0159	.750
27	.0164		.0184 .0144	.688
28	.0149		.0169 .0129	.625

Tolerance shown is for 48" wide sheets. Weights based on nominal thickness @ 41.82 lbs per square foot.

**Weights and Tolerances
for Plates**

Gauge No.	Dec. Equiv.	Toler. Range HR, P&O	Lbs. per Sq. Ft.
3/4"	.750	.780 .736	30.60
5/8"	.625	.655 .611	25.50
1/2"	.500	.530 .486	20.40
3/8"	.375	.405 .361	15.30
5/16"	.312	.342 .298	12.75
1/4"	.250	.280 .236	10.20
3/16"	.187	.217 .173	7.66

Thickness tolerances per ASTM A6 & E29
+.03 / -.014

FRACTION, DECIMAL AND METRIC EQUIVALENTS

	Dec.	MM		Dec.	MM
$\frac{1}{64}$	.0156	.3969	$\frac{33}{64}$	.5156	12.0969
$\frac{1}{32}$	.0313	.7938	$\frac{17}{32}$	.5313	13.4938
$\frac{3}{64}$	.0469	1.1906	$\frac{35}{64}$	.5469	13.8906
$\frac{1}{16}$	.0625	1.9844	$\frac{9}{16}$	.5625	14.2875
$\frac{5}{64}$	.0781	1.9844	$\frac{37}{64}$	.5781	14.6844
$\frac{3}{32}$	.0938	2.3813	$\frac{17}{32}$	.5938	15.0813
$\frac{7}{64}$	.1094	2.7781	$\frac{39}{64}$	.6094	15.4781
$\frac{1}{8}$	.1250	3.1750	$\frac{5}{8}$	.6250	15.8750
$\frac{9}{64}$	.1406	3.5719	$\frac{41}{64}$	.6406	16.2719
$\frac{5}{32}$	.1563	3.9688	$\frac{19}{32}$	.6563	16.6688
$\frac{11}{64}$	.1719	4.3656	$\frac{43}{64}$	.6719	17.0656
$\frac{3}{16}$	.1875	4.7625	$\frac{11}{16}$	.6875	17.4625
$\frac{13}{64}$	.2031	5.1594	$\frac{45}{64}$	.7031	17.8594
$\frac{7}{32}$	.2188	5.5563	$\frac{21}{32}$	.7188	18.2563
$\frac{15}{64}$	.2344	5.9531	$\frac{47}{64}$	.7344	18.6531
$\frac{1}{4}$	.2500	6.3500	$\frac{3}{4}$	.7500	19.0500
$\frac{17}{64}$	.2656	6.7469	$\frac{49}{64}$	.7656	19.4469
$\frac{9}{32}$	.2813	7.1438	$\frac{23}{32}$	.7813	19.8438
$\frac{19}{64}$	.2969	7.5406	$\frac{51}{64}$	.7969	20.2406
$\frac{5}{16}$	.3125	7.9375	$\frac{13}{16}$	.8125	20.6375
$\frac{21}{64}$	.3281	8.3344	$\frac{53}{64}$	.8281	21.0344
$\frac{11}{32}$	.3438	8.7313	$\frac{25}{32}$	.8438	21.4313
$\frac{23}{64}$	.3594	9.1281	$\frac{55}{64}$	.8594	21.8281
$\frac{3}{8}$	.3750	9.5250	$\frac{7}{8}$	.8750	22.2250
$\frac{25}{64}$	.3906	9.9219	$\frac{57}{64}$	.8906	22.6219
$\frac{13}{32}$	.4063	10.3188	$\frac{27}{32}$	.9063	23.0188
$\frac{27}{64}$	.4219	10.7156	$\frac{59}{64}$	.9219	23.4156
$\frac{7}{16}$	.4375	11.1125	$\frac{15}{16}$	.9375	23.8125
$\frac{29}{64}$	.4531	11.5094	$\frac{61}{64}$	.9531	24.2094
$\frac{15}{32}$	.4688	11.9063	$\frac{29}{32}$	.9688	24.6063
$\frac{31}{64}$	.4844	12.3031	$\frac{63}{64}$	.9844	25.0031
$\frac{1}{2}$	.5000	12.7000	1	1.000	25.4000

Glossary of Terms

Aging - Changes in physical and mechanical properties that occur when low carbon steel is stored for some time. Aging is also accelerated by exposure of steel to elevated temperatures. Stretcher strains and fluting can result from aging.

Alloy Steel - Alloy steel is a group of steels with different chemical composition, forming characteristics and strength levels from those normally present in carbon steel. Alloy steel normally has higher alloy content than steel classified as high strength low alloy steel. Alloy steel is often heat treated after part fabrication to develop the desired final physical properties.

Annealing - A process of controlled heating, soaking at elevated temperatures, and controlled cooling for the purposes of softening, developing a micro-structure, improving machinability, or obtaining a special set of physical or mechanical properties.

Brinell Hardness Test - In the Brinell Hardness Test, the value obtained by dividing the applied load (in kilograms) by the surface area of the impression (in square millimeters) resulting from forcing a hard steel or carbide ball onto the steel test sample. The higher the number the harder the steel.

Camber - This is the deviation from edge straightness. The amount is determined along the concave side using a straight edge and expressed as a measure per unit length, e.g. 1" in 20'.

Charpy V-Notch - This is a test to measure the impact strength, or notch toughness, of steel. It is of primary importance to evaluate steels for use where a brittle fracture hazard exists.

Coil Breaks - A deficit exhibiting creases and or a snaky pattern across a metal sheet running transverse to the coiling or rolling direction. The spacing is irregular and its location in the surface is very often random.

Cold Rolled Sheet Products - Flat rolled products for which the required thickness has been obtained by rolling HR bands or sheets without heating at approximately room temperature.

Commercial Quality (CQ) - Sheet of this quality is for uses involving simple bending or moderate drawing. *Commercial Quality* sheet can be bent flat upon itself in any direction at room temperature.

Glossary of Terms

Continuous Cast Steel - A process involving the pouring of liquid steel continuously as it solidifies into a desired semi-finished shape (square, rectangular, or other cross section). The shape is withdrawn from the mold according to a calculated rate based upon the cross section being cast. One of the biggest metallurgical advantages is the uniformity of chemical composition and mechanical properties as compared to ingot cast steels. This results from the fact that the continuous cast slab solidifies in a few minutes, whereas in an ingot, complete solidification is not obtained until hours have gone by. Chemical segregation, characteristic of ingot cast steel, is virtually absent in continuous cast slabs.

Deoxidizing - The removal of oxygen from molten steel by use of suitable elements (i.e. silicon, aluminum) that react with oxygen readily.

Direct Rolling - A relatively new process whereby a continuous cast slab is moved directly into a hot finish mill for rolling into sheet or plate. This process avoids costly re-heating furnaces.

Drawing Quality (DQ) - As compared with sheet of Commercial Quality, Drawing Quality sheet has a greater degree of ductility and is more consistent in performance. The greater ductility and uniformity results from higher standards of production, selection and processing of the steel.

Ductility - Is a measure of the ability of steel to undergo permanent changes without rupturing.

Edges - Mill edge is the normal edge produced in hot rolling and it does not conform to any definite contour. Mill edge product may contain some edge imperfections the more common types of which are checked edges, thin edges (feather) and damaged edges due to handling or processing. These edge conditions are detrimental where joining of the mill edges by welding is practiced. When the customer intends to shear or blank, a sufficient width allowance should be made by the purchaser to assure obtaining the desired shape and size of the pattern sheet.

Elongation - The amount of extension a test specimen undergoes to fracture during tensile testing. A measurement compares a before and after unit gauge length indexed into the specimen. The change is expressed numerically as a percentage of the original gauge length.

Glossary of Terms

Electrogalvanized - A commonly used term to describe steel that has been plated with zinc using an electric current through an electrolyte. Proper name is Electrolytic Zinc Coated Sheet.

Fatigue - The tendency for a metal to break under conditions of repeated cyclic stressing considerably below the ultimate tensile strength.

Fluting - Fluting is a series of sharp parallel kinks or creases occurring in the arc when sheet steel is formed cylindrically, as to stretch the outer surface well beyond its yield point.

Friction Digs - A series of relatively short scratches variable in form and severity.

Galvanized - A term long used to describe steel coated with zinc. The term is associated with the hot-dip process but zinc coating can also be applied by electroplating. The hot-dip process consists of passing the steel through a bath of molten zinc. The electroplating process consists of the application of zinc by electrolytic deposition.

Galvannealed - Is a galvanized sheet steel which is altered by heat treatments or other processes immediately after coating, before the zinc solidifies. The coating produced consists entirely of **iron zinc alloy** and has a rougher appearance than the surface of regular coating. This is known as 'galvannealed' steel. Sheets produced in this manner are dull gray in color, have no spangle, and after proper preparation, are well suited for painting.

Hardenability - Refers to the *depth* to which hardness penetrates. It is that property which determines the depth and distribution of hardness induced by quenching.

High Strength Steel - High strength structural quality sheet steel is a carbon/manganese steel... with a minimum specified yield strength of 35 KSI or greater (regardless of chemistry or processing used to achieve that strength level).

Hot Rolled - Describes steel products that are brought to approximate finished size by rolling at elevated temperatures.

Hot Rolled Plate - Product is defined in ASTM A6, paragraph 3.1. For widths over 8" to 48" thickness range is 0.230" and over. For widths over 48", thickness range is 0.180" and over. Plate product is always cut to length.

Glossary of Terms

Hot Rolled Sheet - Hot rolled sheet product is defined by ASTM A568. For 12" to 48" inclusive, thickness range is 0.044" to 0.230", exclusive; over 48" wide, thickness range is 0.044" to 0.180", exclusive. This specification is the size reference for all ASTM sheet specifications.

Ingot - The solidified steel formed in a mold for subsequent rolling or forging.

KSI - K Equals 1000 PSI... thus the term is actually K (1000) PSI. The P has been dropped... and KSI is the new term. (i.e. 50 KSI=50,000 PSI)

Killed Steel - Steel deoxidized by silicon or aluminum to reduce the oxygen content to a minimum so that no reaction occurs during solidification of the metal. Killed Steels have more uniform properties and chemical composition than other types.

Laminations - Imperfections resulting from the presence of blisters, seams or foreign inclusions, and sometimes visible on the surface of the metal.

Oiled - Application of a suitable oil to flat rolled steel to retard rusting. When surface is a consideration, it is also desirable in reducing friction scratches that may develop in transit. The oil coating is not intended to serve as a lubricant for subsequent fabrication.

Pipe Lamination - A term used to describe a defect in steel, generally caused in the pouring of steel. It usually manifests itself as a void in the centerline of the ingot or slab.

Porosity - The existence of fine holes (pores) in steel.

Quenching and Tempering - A process by which steel is rapidly cooled from above its upper critical temperature to a temperature far below this range. Water or oil is normally used to accelerate the cooling. In the quenched condition, the product is not suitable for most commercial applications because of its lower ductility and high hardness. The steel must, therefore, be tempered in order to soften it somewhat to improve its ductility and toughness. Tempering is a heat treatment done at lower temperatures usually in the range between 400 degrees Fahrenheit and 1200 degrees Fahrenheit.

Rockwell Hardness Test - Forcing a cone-shaped diamond or hardened steel ball into the specimen being tested under standard pressure. The depth of penetration is an indication of the Rockwell Hardness.

Glossary of Terms

Scale - An iron oxide formed on the surface of hot steel, sometimes in the form of large sheets which fall off when the steel is rolled.

Slab - A semi-finished steel block having an oblong cross-section in which width is at least twice thickness. It differs from a bloom which has a square, cross-section.

Slitting - The longitudinal splitting of the overall width of a flat product through rotary knives mounted on a rotating arbor to reduce the original width or to cut two or more separate strips.

Stress Relieving - A process of reducing residual stresses in a metal object by heating the object to a suitable temperature and holding for a sufficient time. This treatment may be applied to relieve stresses induced by flattening, straightening, machining or welding.

Strip (HR) - Flat steel produced by rolling single width, or multiple width and cut to final specified width by slitting. Final product width is 12 inches or less.

Temper - A condition produced in sheet steel by mechanical, chemical or thermal treatment. A given steel may be in the fully softened or annealed temper, or it may be cold worked to the hard temper, or further to spring temper. Intermediate tempers produced by cold working (rolling) are called "quarter-hard", "half-hard", and "three-quarters hard", and are determined by the amount of cold reduction.

Tensile Strength - The maximum tensile stress which a material is capable of sustaining. Tensile strength is calculated from the maximum load during tension test carried to rupture.

Yield Point - The load per unit of original cross-section area which a marked increase in the deformation of the specimen occurs without increase of load. It is usually calculated from the load determined by the drop of the beam of the testing machine or by use of dividers.

Yield Strength - The stress at which a material exhibits a specified deviation from proportionality of stress and strain. An offset of 0.20% is used for many metals. The point measured in PSI at which the metal cross-section will no longer return to its original shape.

Metric Conversion Factors

Multiply	by	to obtain
English to Metric		
Pounds (16 oz.)	.453359	Kilograms
Net Tons (2000 Lbs.)	.90718	Metric Tons
Gross Ton (2240 Lbs.)	1.01605	Metric Tons
Inches	25.4001	Millimeters
Feet	.304801	Meters
Yards	.914402	Meters
Miles (statute)	1.48816	Kilometers
Square Inches	6.45163	Sq. Centimeters
Square Feet	.092903	Square Meters
Pounds per Lineal Ft.	1.48816	Kilograms per Lineal Meter
Pounds per Sq. Inch	.07031	Kilograms per Sq. Centimeter
Pounds per Sq. Ft.	4.88241	Kilograms per Sq. Meter
Pounds per Cu. Foot	16.01837	Kilograms per Cu. Meter

Metric to English

Kilograms	2.20462	Lbs. (avoirdupois)
*Metric Tons	1.10231	Net Tons
		2000 Pounds
*Metric Tons	.98421	Gross Tons
		2240 Pounds
Millimeters	.03937	Inches
Meters	3.280833	Feet
Meters	1.09361	Yards
Kilometers	.62137	Miles (statute)
Square Centimeters	.155	Square Inches
Square Meters	10.376387	Square Feet
Kilograms per Lineal Meter	.67197	Lbs. per Lineal Ft.
Kilograms per Sq. Centimeter	14.2234	Pounds per Sq. In.
Kilograms per Square Meter	.20482	Pounds per Sq. Ft.
Kilograms per Cubic Meter	.06243	Pounds per Cu. Ft.

Note: Length, width and cube denote meters
 Mass and weight denote Grams
 Capacity denotes Liters
 *One Metric Ton=2204.62 Lbs.

ABBREVIATIONS

Kilometer-km	Kilogram-kg
Meter-m	Gram-g or gm
Centimeter-cm	Centigram-cg
millimeter-mm	Milligram-mg

FORMULAS

CIRCLE

- Circumference = diameter x 3.1416
- Circumference = radius x 6.2832
- Diameter = radius x 2
- Diameter = square root of (area/.7854)
- Diameter = square root of area x 1.1283
- Diameter = circumference x .31831
- Radius = diameter /2
- Radius = circumference x .15915
- Radius = square root of area x .56419
- Area = diameter x diameter x .7854
- Area = half of circumference x half of the diameter
- Area = square of circumference x .0796
- Arc length = degrees x radius x .01745
- Degrees of arc = length/(radius x .01745)
- Radius of arc = length/(degrees x .01745)
- Side of equal square = diameter x .8862
- Side of inscribed square = diameter x .7071
- Area of sector = area of circle x degrees of arc/360

CONE

- Area of surface = one-half of circumference of base x slant height x area of base
- Volume = diameter x diameter x .7854 x one-third of the altitude

CUBE

- Volume = width x height x length

CYLINDER

- Area of surface = diameter x 3.1416 x length + area of the two bases
- Area of base = diameter x diameter x .7854
- Area of base = volume/length
- Length = volume/area of base
- Volume = length x area of base
- Capacity in gallons = volume in inches/231
- Capacity in gallons = diameter x diameter x length x .0034
- Capacity in gallons = volume in feet x 7.48

FORMULAS

ELLIPSE

Area = short diameter x long diameter x .78545

HEXAGON

Area = width of side x 2.598 x width of side

PARALLELOGRAM

Area = base x distance between the two parallel sides

PYRAMID

Area = 1/2 perimeter of base x slant height + area of base

Volume = area of base x 1/3 of the altitude

RECTANGLE

Volume = length x width

RECTANGULAR PRISM

Volume = width x height x length

SPHERE

Area of surface = diameter x diameter x 3.1416

Side of inscribed cube = radius x 1.1547

Volume = diameter x diameter x diameter x .5236

SQUARE

Area = length x width

TRIANGLE

Area = one-half of height times base

TRAPEZOID

Area = one-half of the sum of the parallel sides x the height

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