OWEN INDUSTRIES

Paxton & Vierling Steel
P.O. Box 1085
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salespvs@pvsteel.com

Missouri Valley Steel
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salesmvs@mvsteel.com

Northern Plains Steel
P.O. Box 6060
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salesnps@npsteel.com

Tri-City Fabricating & Welding
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Davenport IA 52808-3504
319.381.5000
319.381.4891 FAX
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salestcf@tcfab.com

- STRUCTURAL SHAPES
- PLATES
- SHEETS AND COILS
- HOT ROLLED BARS
- COLD FINISHED BARS
- PIPE & TUBING
- GRATING-EXP. METAL
- ALLOY STEELS
- TOOL STEELS
- STAINLESS
- ALUMINUM
- SPECIAL SERVICES
- WEIGHTS & DATA

GENERAL SALES PRACTICES

The following General Sales Terms are applicable to all sales except where otherwise agreed in writing.

I. Inquiry and Quotation

A. **Price:** Quoted prices are subject to adjustment in order to reflect our costs at time of shipment, and any increases in material, labor, transportation and related items. Material and services quoted are subject to prior sale. We reserve the right to correct any obvious errors in specifications or prices.

B. **Technical Advice:** Technical advice which we may give regarding material selection or services performed does not imply the suitability of any of our products or services for any particular applicaiton; we assume no obligation or liablilty for the advice given or the results obtained.

C. **Tooling:** Tools, dies and fixtures which were developed and used in the production of any goods and services will remain our property.

D. **Patent Infringement:** If any goods and services, which we supply according to customer specifications, result in a claim of patent infringement, our customer is responsible for all resulting liabilities and expenses.

E. **Taxes:** Taxes and related governmental charges which we are required to pay or collect in connection with a sale will be added as a separate item to the quoted price.

F. **Payment Terms:** Payment is due 30 days from invoice date; a cash discount, if any, applies only to the sale price of the goods and does not apply related to charges such as fabrication, taxes and handling. Service charges will be added to, and are payable on, any balance unpaid which is more than 30 days from invoice date.

II. Order Entry and Order Processing

A. **Telephone Orders:** Since many orders will be placed over the telephone and shipped before a written confirmation is received, these orders will be considered correct as written by us.

B. **Confirming Orders:** In order to avoid duplication of telephone orders, confirming orders should be marked as such.

C. **Quantity:** Material shipped from our stock will be shipped in a quantity as close as practical to the ordered quantity and in accordance with general trade practices. Material shipped from a producing mill is subject to the quantity variances established by mill practice and as shown on their price pages.

D. **Changes and Cancellations:** While we will make every effort to accomodate changes or cancellations, any charges for services. materials and labor which were already incurred are the responsibility of the purchaser.

III. Delivery and Shipping

A. **Delivery Schedule:** A quoted delivery schedule is based on the time required to process an order; in the case of special mill material, the delivery schedule is based on the mill's current schedule. Circumstances beyond our control could delay production of services, material, or equipment; in such cases, the delivery date will be extended as is reasonably necessary.

B. **Delivering Carrier:** Unless stated otherwise, we will determine the truck line to haul the material and also the mode of transportation. All material is FOB our plant; title to goods will pass upon delivery of goods to a carrier, who will be selected by us and will act as your agent.

C. **Suspension of Performance:** If, in our judgement, reasonable doubt exists regarding the customer's financial responsiblility, or if the customer is past due in any account owed to us, we have the right to suspend the processing of an order.

IIV. Claims and Rejections

A. **Carrier Claim:** In the case of damaged or short quantity material, the customer should make such notation on the shipping papers and promptly advise us so that we can inspect the material and determine a proper adjustment.

V. Warranties, Remedies

A. **Warranty:** We warrant only that the materials sold by us, or any services which we perform on materials sold by us will conform to the description contained in the purchase order and will be within the the tolerances and variations permitted by ASTM or other applicable standards. We make no other warranties.

B. **Exclusion of Warranties:** ALL WARRANTIES, OTHER THAN THOSE IN A. ABOVE, WHETHER EXPRESS OR IMPLIED ARE EXCLUDED, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PURPOSE ARE EXCLUDED.

C. **Limitation of Remedies:** If any materials or services fail to comply with the warranties in A. above we, at our sole option, will either (a) replace the materials, or (b) refund the purchase price of ther materials, but solely on the condition that buyer notifies us within 30 days after receipt of ther materials of any claimed defect in the materials. Refund or replacement by us will be the sole remedey of buyer. WE WILL NOT BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OR LOSS, WHETHER TO PERSON OR PROPERTY, OR TO THE BUSINESS OF BUYER OR ANY THIRD PARTY.

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–your structural fabricator for all jobs–large or small–utilizing our “in house” services

BEAM SPLITTING – to make “Tees”

DRILLING

FLAME CUTTING

FRICTION SAWING

GALVANIZING

HACK SAWING

MACHINING

MITER CUTTING

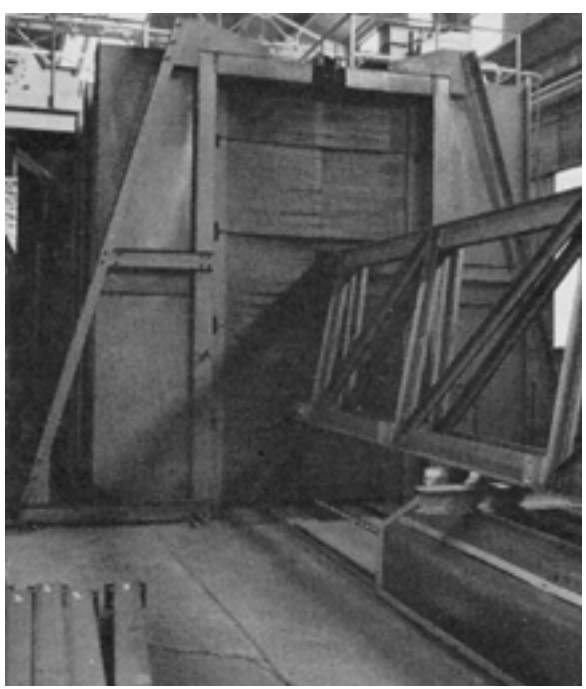
PAINTING

PUNCHING

ROLLING

SHOT BLASTING

WELDING



Shot blasting a built-up truss

STRUCTURAL SHAPES

COMMERCIAL GRADE:

ASTM-A-36 The industry standard for structural steel, this grade is produced to a minimum yield of 36,000 Psi and a tensile strength of 58,000/80,000 Psi. It is suitable for use in welded, riveted or bolted construction of buildings and bridges and other general construction.

HIGH STRENGTH:

ASTM-A-572 This grade is the basic High Strength Low Alloy (HSLA) steel made to specific minimum mechanical properties from 42,000 to 70,000 Psi minimum yield; atmospheric corrosion resistance similar to carbon steels; can be welded using proper techniques.

HIGH STRENGTH – CORROSION RESISTANT:

ASTM-A-242 This grade has superior resistance to atmospheric corrosion – up to 4 times greater than carbon steels; can also be painted; this specification covers web thicknesses through $1^{7}/_{8}$”; mechanical properties are typically 50,000 Psi minimum yield and 70,000 Psi minimum tensile; can be welded using proper techniques.

ASTM-A-441 This grade has double the corrosion resistance of carbon steel; mechanical properties are typically 50,000 Psi minimum yield, and 70,000 Psi minimum tensile; can be welded using proper techniques.

ASTM-A-588 This grade has corrosion restance and mechanical properties similar to ASTM-A-242; this specification covers all web thicknesses.

STANDARD I BEAMS
ASTM A-36 "S" SHAPES

STOCK LENGTHS
Sizes 12" & Smaller – 20', 30', 40' and 55'/60'
Sizes over 12" – Random 55'/60'

AISC Designation

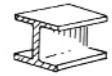
Size in Inches	Weight per Ft. Lbs.	Thickness of Web Inches	Width of Flange Inches
S 3x	5.7	.170	2.330
x	7.5	.349	2.509
S 4x	7.7	.193	2.663
x	9.5	.326	2.796
S 5x	10.5	.214	3.004
x	14.75	.494	3.284
S 6x	12.5	.232	3.332
x	17.25	.465	3.565
S 7x	15.3	.252	3.662
x	20.0	.450	3.860
S 8x	18.4	.271	4.001
x	23.0	.441	4.171
S 10x	25.4	.311	4.661
x	35.0	.594	4.944
S 12x	31.8	.350	5.000
x	35.0	.428	5.078
x	40.8	.462	5.252
x	50.0	.687	5.477
S 15x	42.9	.411	5.501
x	50.0	.550	5.640
S 18x	54.7	.461	6.001
x	70.0	.711	6.251
S 20x	66.0	.505	6.255
x	75.0	.635	6.385
S 24x	80.0	.500	7.000
x	90.0	.625	7.125
x	100.0	.745	7.245
x	106.0	.620	7.870
x	121.0	.800	8.050

HIGH STRENGTH STANDARD I BEAMS

ASTM A-242 Type I – Corten A or equivalent
ASTM-A-588 – Corten B or equivalent ASTM-A441 – Tri-Ten or equivalent
ASTM A-572 Grades, 42, 50, 60 – Ex-Ten, INX or Equivalent

Nominal Size	Weight per Ft. Lbs.	Nominal Size	Width of Flange Inches
S 3x	5.7	**S 8x**	18.4
S 4x	7.7	**S 10x**	25.4
S 5x	10.0	**S 12x**	31.8
S 6x	12.5		

WIDE FLANGE BEAMS
ASTM A-36 "W" & "M"* SHAPES



STOCK LENGTHS
Sizes 12" & Smaller – 20', 30', 40' and 55'/60'
Sizes over 12" – Random 55'/60'

AISC Designation

Size in Inches	Weight per Ft. Lbs.	Depth of Section Inches	Flange Width Inches	Flange Thickness Inches	Web Thickness Inches
W 4x	13.0	4.16	4.060	.345	.280
M 4x	13.0	4.00	3.940	.371	.254
W 5x	16.0	5.01	5.000	.360	.240
x	19.0	5.15	5.030	.430	.270
M 5x	18.9	5.00	5.003	.416	.316
M 6x	4.4	6.00	1.844	.171	.114
W 6x	9.0	5.90	3.940	.215	.170
x	12.0	6.03	4.000	.280	.230
x	15.0	5.99	5.990	.260	.230
x	16.0	6.28	4.030	.405	.260
M 6x	20.0	6.00	5.938	.379	.250
W 6x	20.0	6.20	6.020	.365	.260
x	25.0	6.38	6.080	.455	.320
M 8x	6.50	8.00	2.281	.189	.135
W 8x	10.0	7.89	3.940	.205	.170
x	13.0	7.99	4.000	.255	.230
x	15.0	8.11	4.015	.315	.245
x	18.0	8.14	5.250	.330	.230
x	21.0	8.28	5.270	.400	.250
x	24.0	7.93	6.495	.400	.245
x	28.0	8.06	6.535	.465	.285
x	31.0	8.00	7.995	.435	.285
x	35.0	8.12	8.020	.495	.310
x	40.0	8.25	8.070	.560	.360
x	48.0	8.50	8.110	.685	.400
x	58.0	8.75	8.220	.810	.510
x	67.0	9.00	8.280	.935	.570
M 10x	9.0	10.00	2.690	.206	.157
W 10x	12.0	9.87	3.960	.210	.190
x	15.0	9.99	4.000	.270	.230
x	17.0	10.11	4.010	.330	.240
x	19.0	10.24	4.020	.395	.250
x	22.0	10.17	5.750	.360	.240
x	26.0	10.33	5.770	.440	.260
x	30.0	10.47	5.810	.510	.300
x	33.0	9.73	7.960	.435	.290
x	39.0	9.92	7.985	.530	.315
x	45.0	10.10	8.020	.620	.350

* "M" beams were formerly called Junior, H, or Light Beams.

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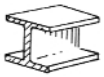

WIDE FLANGE BEAMS
ASTM A-36 "W" SHAPES* "M" SHAPES

STOCK LENGTHS
Sizes 12" & Smaller – 20', 30', 40' and 55'/60'
Sizes over 12" – Random 55'/60'

AISC Designation

Size in Inches	Weight per Ft. Lbs.	Depth of Section Inches	Flange Width Inches	Flange Thickness Inches	Web Thickness Inches
W 10x	49.0	9.98	10.000	.560	.340
x	54.0	10.09	10.030	.615	.370
x	60.0	10.22	10.080	.680	.420
x	68.0	10.40	10.130	.770	.470
x	77.0	10.60	10.190	.870	.530
x	88.0	10.84	10.265	.990	.605
x	100.0	11.10	10.340	1.120	.680
x	112.0	11.36	10.415	1.250	.755
M 12x	11.8	12.00	3.065	.225	.177
W 12x	14.0	11.91	3.970	.225	.200
x	16.0	11.99	3.990	.265	.220
x	19.0	12.16	4.005	.350	.235
x	22.0	12.31	4.030	.425	.260
x	26.0	12.22	6.490	.380	.230
x	30.0	12.34	6.520	.440	.260
x	35.0	12.50	6.560	.520	.300
x	40.0	11.94	8.005	.515	.295
x	45.0	12.06	8.045	.575	.335
x	50.0	12.19	8.080	.640	.370
x	53.0	12.06	9.995	.575	.345
x	58.0	12.19	10.010	.640	.360
x	65.0	12.12	12.000	.605	.390
x	72.0	12.25	12.040	.670	.430
x	79.0	12.38	12.080	.735	.470
x	87.0	12.53	12.125	.810	.515
x	96.0	12.71	12.160	.900	.550
x	106.0	12.89	12.220	.990	.610
x	120.0	13.12	12.320	1.105	.710
x	136.0	13.41	12.400	1.250	.790
M 14x	18.0	14.00	4.000	.270	.215
W 14x	22.0	13.74	5.000	.335	.230
x	26.0	13.91	5.025	.420	.255
x	30.0	13.84	6.730	.385	.270
x	34.0	13.98	6.745	.455	.285
x	38.0	14.10	6.770	.515	.310

* "M" beams were formerly called Junior, H, or Light Beams.

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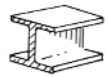
WIDE FLANGE BEAMS
ASTM A-36 "W" SHAPES



STOCK LENGTHS
Sizes 12" – Random 55'/60'

AISC Designation

Size in Inches	Weight per Ft. Lbs.	Depth of Section Inches	Flange Width Inches	Flange Thickness Inches	Web Thickness Inches
W 14x	43.0	13.66	7.995	.530	.305
x	48.0	13.79	8.030	.595	.340
x	53.0	13.92	8.060	.660	.370
W 14x	61.0	13.89	9.995	.645	.375
x	68.0	14.04	10.035	.720	.415
x	74.0	14.17	10.070	.785	.450
W 14x	82.0	14.31	10.130	.855	.510
W 14x	90.0	14.02	14.520	.710	.440
x	99.0	14.16	14.565	.780	.485
x	109.0	14.32	14.605	.860	.525
W 16x	26.0	15.69	5.500	.345	.250
x	31.0	15.88	5.525	.440	.275
W 16x	36.0	15.86	6.985	.430	.295
x	40.0	16.01	6.995	.505	.305
x	45.0	16.13	7.035	.565	.345
x	50.0	16.26	7.070	.630	.380
x	57.0	16.43	7.120	.715	.430
x	67.0	16.33	10.235	.665	.395
x	77.0	16.52	10.295	.760	.455
W 16x	89.0	16.75	10.365	.875	.525
x	100.0	16.97	10.425	.985	.585
W 18x	35.0	17.70	6.000	.425	.300
x	40.0	17.90	6.015	.525	.315
x	46.0	18.06	6.060	.605	.360
x	50.0	17.99	7.495	.570	.355
x	55.0	18.11	7.530	.630	.390
x	60.0	18.24	7.555	.695	.415
W 18x	65.0	18.35	7.590	.750	.450
x	71.0	18.47	7.635	.810	.495
x	76.0	18.21	11.035	.680	.425
x	86.0	18.39	11.090	.770	.480
W18x	97.0	18.59	11.145	.870	.535
x	106.0	18.73	11.200	.940	.590
x	119.0	18.97	11.265	1.060	.655

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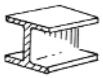

WIDE FLANGE BEAMS
ASTM A-36 "W" SHAPES

STOCK LENGTHS

Sizes 12" – Random 55'/60'

AISC Designation

Size in Inches	Weight per Ft. Lbs.	Depth of Section Inches	Flange Width Inches	Flange Thickness Inches	Web Thickness Inches
W 21x	44.0	20.66	6.500	.450	.350
x	50.0	20.83	6.530	.535	.380
x	57.0	21.06	6.555	.650	.405
x	62.0	20.99	8.240	.615	.400
x	68.0	21.13	8.270	.685	.430
x	73.0	21.24	8.295	.740	.455
x	83.0	21.43	8.355	.835	.515
x	93.0	21.62	8.420	.930	.580
x	101.0	21.36	12.290	.800	.500
x	111.0	21.51	12.340	.875	.550
x	122.0	21.68	12.390	.960	.600
x	132.0	21.83	12.440	1.035	.650
x	147.0	22.06	12.510	1.150	.720
W 24x	55.0	23.57	7.005	.505	.395
x	62.0	23.74	7.040	.590	.430
x	68.0	23.73	8.965	.585	.415
x	76.0	23.92	8.990	.680	.440
x	84.0	24.10	9.020	.770	.470
x	94.0	24.31	9.065	.875	.515
x	104.0	24.06	12.750	.750	.500
x	117.0	24.26	12.800	.850	.550
x	131.0	24.48	12.855	.960	.605
x	146.0	24.74	12.900	1.090	.650
W 27x	84.0	26.71	9.960	.640	.460
x	94.0	26.92	9.990	.745	.490
x	102.0	27.09	10.015	.830	.515
x	114.0	27.29	10.070	.930	.570
x	146.0	27.38	13.965	.975	.605
W 30x	99.0	29.65	10.450	.670	.520
x	108.0	29.83	10.475	.760	.545
x	116.0	30.01	10.495	.850	.565
x	124.0	30.17	10.515	.930	.585
x	132.0	30.31	10.545	1.000	.615
x	173.0	30.44	14.985	1.065	.655
x	191.0	30.68	15.040	1.185	.710
x	211.0	30.94	15.105	1.315	.775

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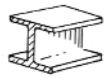
WIDE FLANGE BEAMS
ASTM A-36 "W" SHAPES



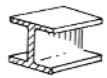
STOCK LENGTHS

Sizes 12" – Random 55'/60'

AISC Designation

Size in Inches	Weight per Ft. Lbs.	Depth of Section Inches	Flange Width Inches	Flange Thickness Inches	Web Thickness Inches
W 33x	118.0	32.86	11.480	.740	.550
x	130.0	33.09	11.510	.855	.580
x	141.0	33.30	11.535	.960	.605
x	152.0	33.49	11.565	1.055	.635
x	169.0	33.82	11.500	1.220	.670
x	201.0	33.68	15.745	1.150	.715
x	221.0	33.93	15.805	1.275	.775
x	241.0	34.18	15.860	1.400	.830
x	263.0	34.53	15.805	1.570	.870
x	291.0	34.84	15.905	7.730	.960
x	318.0	35.16	15.985	1.890	1.040
x	354.0	35.55	16.100	2.090	1.160
W 36x	135.0	35.55	11.950	.790	.600
x	150.0	35.85	11.975	.940	.625
x	160.0	36.01	12.000	1.020	.650
x	170.0	36.17	12.030	1.100	.680
x	182.0	36.33	12.075	1.180	.725
x	194.0	36.49	12.115	1.260	.765
x	210.0	36.69	12.180	1.360	.830
x	230.0	35.90	16.470	1.260	.760
x	232.0	37.12	12.120	1.570	.870
x	245.0	36.08	16.510	1.350	.800
x	256.0	37.43	12.215	1.730	.960
x	260.0	36.26	16.550	1.440	.840
x	280.0	36.52	16.595	1.570	.885
x	300.0	36.74	16.655	1.680	.945
x	328.0	37.09	16.630	1.850	1.020
x	359.0	37.40	16.730	2.010	1.120

HIGH STRENGTH WIDE FLANGE BEAMS



ASTM A-242 Type 1 – Corten A or equivalent
ASTM-A-588 – Corten B or equivalent ASTM-A-441 – Tri-Ten or equivalent
ASTM-A-572 Grades, 42, 50, 60 – Ex-Ten, INX or Equivalent

Nominal Size	Weight per Ft. Lbs.	Nominal Size	Weight per Ft. Lbs.
W 6x	9.0	**W 10x**	15.0
	12.0		22.0
	16.0	**W 12x**	26.0
W 8x	13.0	**W 14x**	30.0
	18.0	**W 16x**	36.0
	24.0	**W 18x**	50.0
	31.0		

ANGLES – Bar Size

M1020 Merchant Quality or ASTM A-36

STOCK LENGTHS 20’, 40’

Size in Inches	Weight per Ft. Lbs.	Estimated Weight 20’ Bar	Estimated Weight 40’ Bar
½ x ½ x ⅛	.38	7.6	...
⅝ x ⅝ x ⅛	.48	9.6	...
¾ x ¾ x ⅛	.59	11.8	...
1 x ⅝ x ⅛	.64	12.8	...
1 x 1 x ⅛	.80	16.0	32.00
³⁄₁₆	1.16	23.2	46.40
¼	1.49	29.8	59.60
1⅛ x 1⅛ x ⅛	.90	18.0	36.00
1¼ x 1¼ x ⅛	1.01	20.2	40.40
³⁄₁₆	1.48	29.6	59.20
¼	1.92	38.4	76.80
1⅜ x ⅞ x ⅛	.91	18.2	36.40
³⁄₁₆	1.32	26.4	52.80
1½ x 1¼ x ³⁄₁₆	1.64	32.8	65.60
1½ x 1½ x ⅛	1.23	24.6	49.20
³⁄₁₆	1.80	36.0	72.00
¼	2.34	46.8	93.6
1¾ x 1¼ x ⅛	1.23	24.6	49.2
³⁄₁₆	1.80	36.0	72.0
¼	2.34	46.8	93.6
1¾ x 1¾ x ⅛	1.44	28.8	57.60
³⁄₁₆	2.12	42.4	84.80
¼	2.77	55.4	110.80
2 x 1¼ x ³⁄₁₆	1.96	39.2	78.40
¼	2.55	51.0	102.00
2 x 1½ x ⅛	1.44	28.8	57.60
³⁄₁₆	2.12	42.4	84.80
¼	2.77	55.4	110.80
2 x 2 x ⅛	1.65	33.0	66.00
³⁄₁₆	2.44	48.8	97.60
¼	3.19	63.8	127.60
⁵⁄₁₆	3.92	78.4	156.80
⅜	4.70	94.0	188.00
2½ x 1½ x ³⁄₁₆	2.44	48.8	97.60
¼	3.19	63.8	127.60
⁵⁄₁₆	3.92	78.4	156.80
2½ x 2 x ³⁄₁₆	2.75	55.0	110.00
¼	3.62	72.4	114.80
⁵⁄₁₆	4.50	90.0	180.00
⅜	5.30	106.0	212.00
2½ x 2½ x ³⁄₁₆	3.07	61.4	122.80
¼	4.10	82.0	164.00
⁵⁄₁₆	5.00	100.0	200.00
⅜	5.90	118.0	236.00
½	7.70	154.0	308.00
3 x 2 x ³⁄₁₆	and Larger–See Next Page		

ANGLES – Sturctural

ASTM A-36

STOCK LENGTHS

Under 28.7 lbs. per ft. – 20’, 30’, 40’ and 55’/60’

28.7 lbs. per ft. & heavier – 40’ and Random 55’/60’

AISC Designation

Size in Inches	Weight per Ft. Lbs.
L 3 x 2 x ³⁄₁₆	3.07
¼	4.1
⁵⁄₁₆	5.0
⅜	5.9
½	7.7
L 3 x 2½ x ¼	4.5
⁵⁄₁₆	5.6
⅜	6.6
½	8.5
L 3 x 3 x ³⁄₁₆	3.71
¼	4.9
⁵⁄₁₆	6.1
⅜	7.2
⁷⁄₁₆	8.3
½	9.4
L 3½ x 2½ x ¼	4.9
⁵⁄₁₆	6.1
⅜	7.2
½	9.4
L 3½ x 3 x ¼	5.4
⁵⁄₁₆	6.6
⅜	7.9
½	10.2
L 3½ x 3½ x ¼	5.8
⁵⁄₁₆	7.2
⅜	8.5
⁷⁄₁₆	9.8
½	11.1
L 4 x 3 x ¼	5.8
⁵⁄₁₆	7.2
⅜	8.5
½	11.1
⅝	13.6
L 4 x 3½ x ¼	6.2
⁵⁄₁₆	7.7
⅜	9.1
½	11.9
L 4 x 4 x ¼	6.6
⁵⁄₁₆	8.2
⅜	9.8
½	12.8
⅝	15.7
¾	18.5
L 5 x 3 x ¼	6.6
⁵⁄₁₆	8.2
⅜	9.8
½	12.8
L 5 x 3½ x ¼	7.0
⁵⁄₁₆	8.7
⅜	10.4
½	13.6
⅝	16.8
¾	19.8
L 5 x 5 x ⁵⁄₁₆	10.3
⅜	12.3
½	16.2
⅝	20.0
¾	23.6
L 6 x 3½ x ⁵⁄₁₆	9.8
⅜	11.7
½	15.3
L 6 x 4 x ⁵⁄₁₆	10.3
⅜	12.3
½	16.2
⅝	20.0
¾	23.6
⅞	27.2
L 6 x 6 x ⅜	14.9
½	19.6
⅝	24.2
¾	28.7
⅞	33.1
1	37.4
L 7 x 4 x ⅜	13.6
½	17.9
⅝	22.1
¾	26.2
L 8 x 4 x ½	19.6
¾	28.7
L 8 x 6 x ½	23.0
⅝	28.5
L 8 x 6 x ¾	33.8
1	44.2
L 8 x 8 x ½	26.4
⅝	32.7
¾	38.9
⅞	45.0
1	51.0

HIGH STRENGTH ANGLES

ASTM A-242 TYPE I – Corten A or equivalent
ASTM-A-588 – Corten B or equivalent ASTM-A-441 – Tri-Ten or equivalent
ASTM-A-572 Grades, 42, 50, 60 – E.-Ten, INX or Equivalent

Nominal Size	Weight per Ft. Lbs.	Nominal Size	Weight per Ft. Lbs.
1 x 1 x ⅛	.80	3 x 2 x ¼	4.1
x 3/16	1.16	3 x 3 x 3/16	3.7
1¼ x 1¼ x 3/16	1.48	x ¼	4.9
1½ x 1½ x 3/16	1.80	x ⅜	7.2
x ¼	2.34	3½ x 3½ x ¼	5.8
2 x 2 x ⅛	1.65	x ⅜	8.5
x 3/16	2.44	4 x 3 x ¼	5.8
x ¼	3.19	4 x 4 x ¼	6.6
2½ x 2½ x 3/16	3.07	x ⅜	9.8
x ¼	4.10	x ½	12.8
x 5/16	5.00	5 x 3 x ¼	6.6
		x ⅜	9.8
		5 x 5 x ⅜	12.3
		½	16.2

GALVANIZED ANGLES

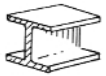
M1020 Merchant Quality or ASTM A-36
Hot Rolled – Hot Dip Process
STOCK LENGTHS – 20 Ft.

Nominal Size	Weight per Ft. Lbs.	Est. Wt. 20' Bar
1 x 1 x ⅛	.85	17.0
x 3/16	1.23	24.6
1¼ x 1¼ x ⅛	1.07	21.4
x 3/16	1.57	31.4
1½ x 1½ x ⅛	1.30	26.0
x 3/16	1.91	38.2
x ¼	2.48	49.6
2 x 2 x ⅛	1.75	35.0
x 3/16	2.58	51.6
x ¼	3.38	67.6
2½ x 2½ x ¼	4.31	86.2
3 x 3 x ¼	5.17	103.4

All sizes angles to 20 ft. in length can be quickly galvanized.
Please contact us for quotation.

SHAPES – GALVANIZED

All of the Bar size and Structural sections to 20 feet in length can be galvanized.
Please inquire.



H BEARING PILES

ASTM A-36 "HP" SHAPES AISC Designation

STOCK LENGTHS 40,' 55' and 60'

Size in Inches	Weight per Ft. Lbs.	Depth of Section Inches	Flange Width Inches	Flange Thickness Inches	Web Thickness Inches
HP 8 x	36.0	8.02	8.155	.445	.445
HP 10 x	42.0	9.70	10.075	.420	.415
HP 10 x	57.0	9.99	10.225	.565	.565
HP 12 x	53.0	11.78	12.045	.435	.435
HP 12 x	74.0	12.13	12.215	.610	.605
HP 14 x	73.0	13.61	14.585	.505	.505

RAILS **New Billet Steel ASCE Sections**

Weight per Yard	Section No.	Height in Inches	Width of Base	Width of Head	Stock Lengths Feet	Track Bolts to Be Used
20	2040	2⅝	2⅝	1 11/32	30	½ x 2
25	2540	2¾	2¾	1½	30	½ x 2¼
30	3040	3⅛	3⅛	1 11/16	30	⅝ x 2½
40	4040	3½	3½	1⅞	30	¾ x 3
60	6040	4¼	4¼	2⅜	33	¾ x 3½
80	8040	5	5	2½	30, 33	⅞ x 4⅛
90	9040	5⅜	5⅜	2⅝	33, 39	1 x 4½
100	10040	5¾	5¾	2¾	33	1 x 5

CHANNELS – Bar Size

M1020 Merchant Quality or ASTM A-36

Size in Inches	Weight per Ft. Lbs.	Web Thickness Inches
¾ x ⅜ x ⅛	.56	11.20
⅞ x ⅜ x ⅛	.65	13.00
1 x ⅜ x ⅛	.68	13.60
½ x ⅛	.84	16.80
1⅛ x 9/16 x 3/16	1.16	23.20
1¼ x ½ x ⅛	1.01	20.20
1½ x ⅛ x ⅛	1.12	22.40
9/16 x ⅛	1.44	28.80
2 x ½ x ⅛	1.43	28.60
9/16 x 3/16	1.86	37.20
⅝ x ¼	2.28	45.60
1 x ⅛	1.59	31.80
1 x 3/16	2.32	46.40
2½ x ⅝ x 3/16	2.27	45.40

CHANNELS – Sturctural

ASTM A-36 "C" SHAPES

STOCK LENGTHS

Sizes 12" & Smaller – 20', 30', 40' and 55'/60'
Sizes over 12" – Random 55'/60'

AISC Designation

Depth of Channel Inches	Weight per Ft. Lbs.	Thickness of Web Inches	Width of Flange Inches
C 3 x	4.1	.170	1.410
x	5.0	.258	1.498
x	6.0	.356	1.596
C 4 x	5.4	.184	1.584
x	7.25	.321	1.721
C 5 x	6.7	.190	1.750
x	9.0	.325	1.885
C 6 x	8.2	.200	1.920
x	10.5	.314	2.034
x	13.0	.437	2.157
C 7 x	9.8	.210	2.090
x	12.25	.314	2.194
x	14.75	.419	2.299
C 8 x	8.5	.179	1.874
x	11.5	.220	2.260
x	13.75	.303	2.343
x	18.75	.487	2.527
C 9 x	13.4	.233	2.433
x	15.0	.285	2.485
x	20.0	.448	2.648
C 10 x	15.3	.240	2.600
x	20.0	.379	2.739
x	25.0	.526	2.886
x	30.0	.673	3.033
C 12 x	20.7	.282	2.942
x	25.0	.387	3.047
x	30.0	.510	3.170
C 15 x	33.9	.400	3.400
	40.0	.520	3.520
	50.0	.716	3.716

STAIR STRINGER (JUNIOR) CHANNELS

ASTM A-36 "MC" SHAPES

STOCK LENGTHS 20', 30', 40' and 55'/60'

AISC Designation

Depth of Channel Inches	Weight per Ft. Lbs.	Thickness of Web Inches	Width of Flange Inches
MC 10 x	6.5	.152	1.127
MC 10 x	8.4	.170	1.500
MC 12 x	10.6	.190	1.500

SHIP AND CAR CHANNELS

ASTM A-36 "MC" SHAPES

STOCK LENGTHS
Sizes 12" & Smaller – 20', 30', 40' and 55'/60'
Sizeds over 12" – Random 55'/60'

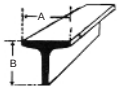
AISC Designation

Size in Inches	Weight per Ft. Lbs.	Thickness of Web Inches	Width of Flange Inches
MC 3 x	7.1	.312	1.938
MC 4 x	13.8	.500	2.500
MC 6 x	12.0	.310	2.497
x	15.3	.340	3.500
x	16.3	.375	3.000
x	18.0	.379	3.504
MC 7 x	17.6	.375	3.000
x	19.1	.352	3.452
x	22.7	.503	3.603
MC 8 x	18.7	.353	2.978
x	20.0	.400	3.025
x	21.4	.375	3.450
x	22.8	.427	3.502
MC 9 x	23.9	.400	3.450
x	25.4	.450	3.500
MC 10 x	6.5	.152	1.127
x	8.4	.170	1.500
x	22.0	.290	3.315
x	28.5	.425	3.950
x	33.6	.575	4.100
MC 12 x	10.6	.190	1.500
x	35.0	.467	3.767
x	45.0	.712	4.012
x	50.0	.835	4.135
MC 13 x	31.8	.375	4.000
x	40.0	.560	4.185
x	50.0	.787	4.412
MC 18 x	42.7	.450	3.950
x	45.8	.500	4.000
x	51.9	.600	4.100
x	58.0	.700	4.200

HIGH STRENGTH CHANNELS

ASTM A-242 Type 1 – Corten A or equivalent
ASTM-A-588 – Cortn B or equivalent ASTM-A-441 – Tri-Ten or equivalent
ASTM-A-572 Grades, 42, 50, 60 – Ex-Ten INX or Equivalent

Depth Channel Inches	Weight per Ft. Lbs.	Depth Channel Inches	Weight per Ft. Lbs.
C 3 x	4.1	**C 7 x**	9.8
C 4 x	5.4	**C 8 x**	11.5
C 5 x	6.7	**C 10 x**	15.3
C 6 x	8.2	**C 12 x**	20.7



TEES – Bar Size

M1020 Merchant Quality or ASTM A-36

Specify TEES by Flange first, then Stem and Thickness

STOCK LENGTHS – 20 Ft.

"A" Flange Inches	"B" Stem Inches	Stem Thick. Inches	Weight per Ft. Lbs.
1¼	1¼	3/16	1.55
1½	1½	3/16	1.90
		¼	2.43
1¾	1¾	3/16	2.16
2	2	¼	3.62
		5/16	4.30
2½	2½	¼	4.60
		5/16	5.50
		⅜	6.40

TEES – Structural

ASTM A-36 "ST", "MT" & "WT" SHAPES

Specify TEES by Flange first, then Stem and Thickness

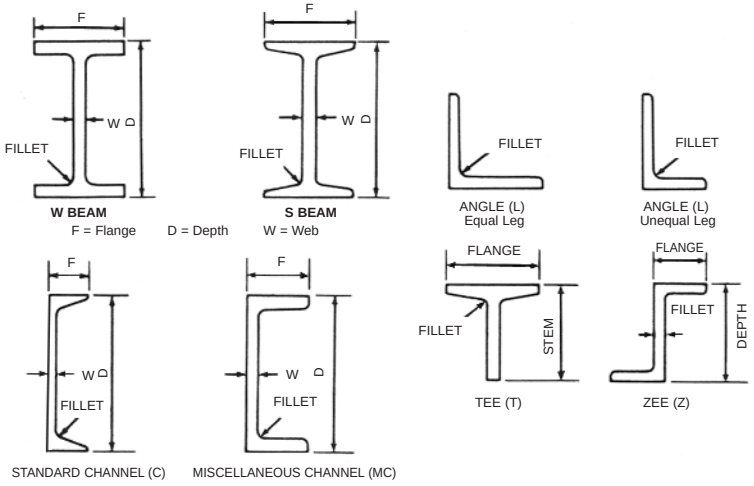
You may select sizes of Structural Tees by having us cut a standard I-Beam Wide Flange Beam, etc., into two, T-shaped halves. Be sure to order in pairs.

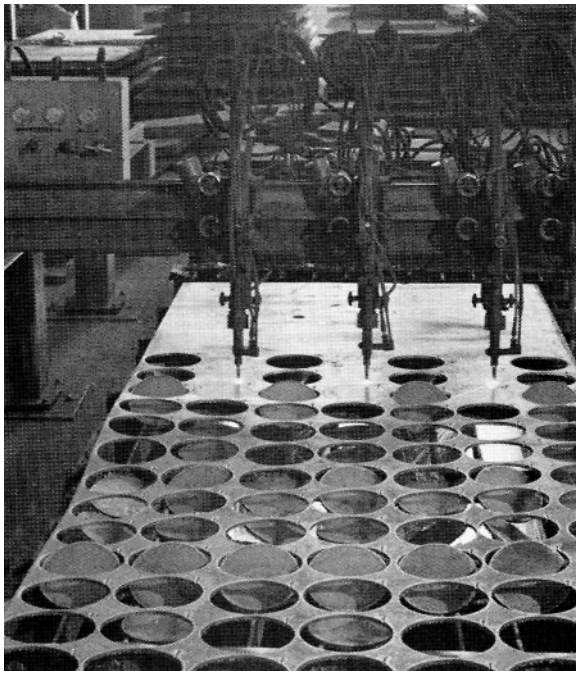
ZEES

Structurals ASTM A-36

AISC Designation Depth/Flange/In. x Wt./Ft./Lbs.	Flanges in Inches	Thickness in Inches
Z 3 x 6.7	2 11/16	¼
9.8	2 11/16	⅜
Z 4 x 8.2	3 1/16	¼

STRUCTURAL SHAPES TERMINOLOGY





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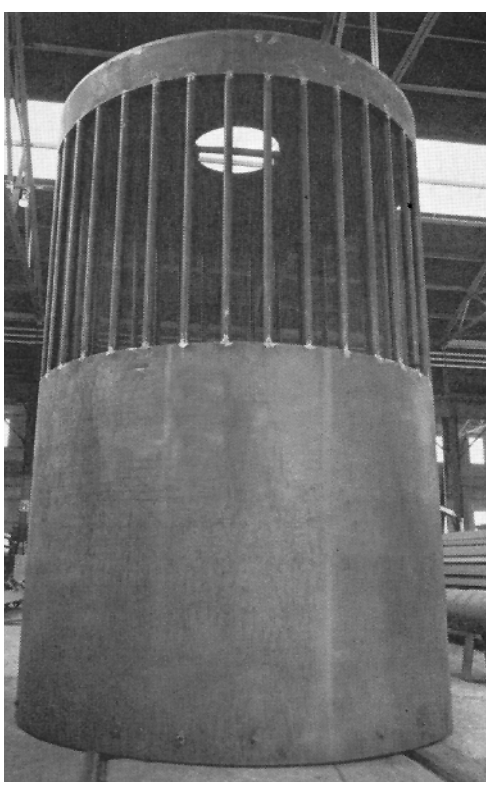
–your "First-Step" processor – dependable and economical service – with "in-house" equipment

BEVELING	PLASMA ARC CUTTING
DRILLING	PUNCHING
FLAME CUTTING	ROLLING
FORMING	SHEARING
MACHINING	SHOT BLASTING
NIBBLING	WELDING



Fabricated intake air tube

CARBON GRADE PLATES

LOW CARBON:
Low Carbon, Commercial Quality – thicknesses ⅝" and lighter are held to .12 maximum carbon for best forming and welding; thicknesses over ⅝" are .33 maximum carbon for improved machinability, while retaining forming and welding qualities.

U.M. – Universal Mill Edge Plate is produced to the same chemical and mechanical properties as low carbon and A36 plate; unlike these other plate grades, however, U.M. plate is stocked 12" wide and narrower and 1" thick and under.

MEDIUM CARBON:
.40/.50 C – this material is silicon killed and has a higher carbon content for increased strength levels over low carbon plate; higher strength and surface hardness levels can be obtained through heat treatment; machinability is good, forming and welding are limited due to the higher carbon.

HIGH CARBON:
C 1095 – this material has a carbon range of .90 to 1.03 and is silicon-killed; the high carbon content makes this material suitable for abrasive and sliding friction applications; higher surface levels can be obtained through heat treatment; machinability is good; formability and weldability are limited due to the high carbon content.

FREE MACHINING:
Low Carbon – this material is a low carbon (.15/.20), high manganese (.90/1.30), silicon-killed steel, with a controlled sulfur additive; can be machined faster than low carbon plate to produce a smooth bright finish with minimal tearing or warping; with proper techniques, this material can be welded; this grade is recommended when machinability, case hardening and cleanliness of material are required.

Medium Carbon – this material is a .40/50 carbon version of Free Machining Plate with higher strength levels, good flame hardenability and machining properties, but limited weldabilty.

ABRASION RESISTING:
AR 225 – this grade is an as rolled product of medium carbon, high manganese content; surface hardness range is 200/250 Bhn; can be welded, machined, and formed satisfactorily.

AR 360– this grade is a heat treated alloyed steel which has a surface hardness of 360 minimum Bhn (360-400 approximate range); offers excellent sliding and abrasion resisting characteristics; can be welded and formed with proper pretreatment.

FLOOR PLATE
This product is steel plate rolled with a raised lug pattern to provide better traction and better footing than smooth plate; thicknesses available 16 gauge through 1"; the lug pattern will vary with the thickness of the material; applications include truck beds, platforms, stair treads, bumpers and related applications.

STRUCTURAL QUALITY PLATES

COMMERCIAL GRADE:
A36 – all sizes and thicknesses which are available in Low Carbon are also available in ASTM-A36, structural quality steel; A36 steel is produced to a minimum yield of 36,000 Psi and has good weldability.

HIGH STRENGTH LOW ALLOY:
ASTM-A -572 – this grade is the basic High Strength Low Alloy (HSLA) Steel made to specific minimum mechanical properties from 42,000 to 70,000 Psi minimum yield; good cold forming and welding properties; corrosion resistance similar to carbon steel; Grade 50 also conforms to SAE J410, Gr. 950X.

ASTM-A-656 – this grade offers improved formability obtained through fine grain rolling and the addition of specific alloying elements; manufactured to specific minimum mechanical properties from 50,000 to 80,000 Psi minimum yield; good cold forming, welding, and toughness properties.

HIGH STRENGTH – CORROSION RESISTING
ASTM-A-242 – this grade has superior resistance to atmospheric corrosion – up to 5 times greater than carbon steels; easily cold formed and welded; can also be painted; thickness range is ½" and under; mechanical properties are typically 50,000 Psi minimum yield and 70,000 Psi minimum tensile; this material also conforms to SAE-J-401B and MIL-S-12505A.

ASTM-A-441 – this grade has double the corrosion resistance of carbon steel; readily cold formed, welded, and is suitable for moderate impact loading applications; mechanical properties are 50,000 Psi minimum yield and 70,000 Psi minimum tensile for thickness ¾" and lighter; for heavier thicknesses, the minimum mechanical properties drop slightly; this material also conforms to SAE-J-401B and MIL-S-12505A.

ASTM-A-588 – this grade has corrosion resistance and mechanical properties similar to ASTM-A-242; available in thicknesses over ½".

ASTM-A-588, Grade A – Corten B or Equivalent
ASTM-A-441, Tri-Ten, Tri-Steel or Equivalent
ASTM-A-572, Ex-Ten, INX or Equivalent
ASTM-A-588, Grade A – Corten B or Equivalent
ASTM-A-656, Maxi-Form Hi-Form or Equivalent

Fabrication Bending Information
for minimum inside radius, times material thickness

ASTM-A-242, A-588, A-441: ¼" thick and under, 2T; over ¼", 3T.

ASTM-A-572: ¼" thick and under: Grades 42 and 45, 1T; Grade 50, 2T; Grade 55, 2½"T, Grade 60, 3T, Grade 65, 3½"T, Grade 70, 4T.

Over ¼" to ½" inclusive: Grades 42 and 45, 2T Grade 50, 2½T; Grade 55, 3T; Grade 60, 3½T; Grade 65, 4T; Grade 70, 4½T.
Note Material over ½" should normally be pre-heated prior to bending.

STRUCTURAL QUALITY PLATES

QUENCH AND TEMPERED CONSTRUCITON ALLOYS:
Quenched and Tempered Alloy Plates are an alloyed, heat treated, high strength plate produced to minimum mechanical properties of 100,000 Psi minimum yield; in addition to high strength levels, other benefits are formability and weldability, with proper pretreatment, along with corrosion resistance and toughness, especially at sup-zero temperatures.

ASTM-A 514 Grade B through 1¼" thick. Similar to T-1 Type A.
ASTM-A 514 Grade H through 2" thick. Similar to T-1 Type B.
ASTM-A 514 Grade F through 2½" thick. Similar to T-1.
ASTM-A 514 Grade Q through 6" thick. Similar to T-1 Type A.

FORMING – Structural Quality material is readily cold formed, provided sufficient power is available and allowance is made greater spring back than with mild stee. Hot forming may be done at temperatures below 1100˚F without destroying the mechanical properties or toughness. Hot forming may be done at 1600-1800˚F, but the formed part must be heat treated to restore its original properties.

WELDABILITY – Techniques similar to those used in structural carbon steels apply, but precautions must be exercised. Hydorgen must be kept out of the welding operation. Large sections or those under high restraint should be preheated to temperatures not excedding 400˚ F.

HEAT TREATING – Stress relieving may be performed, if necessary, by heating at temperatures up to 1100˚F. If Structural Quality material is heated over 1100˚F, it must be re-heat treated to restore the orignial strength.

Austenitize – 1650˚-1700˚F.
Quench – Agitated Water
Temper – 1150˚-1250˚F.

QUENCH AND TEMPERED ABRASION RESISTENT:
A-514 Grade B – this grade is a fully alloyed, heat treated steel which is tempered to a Bhn of 321/380; this product is designed for severe impact abrasion, especially at low temperatures; can be welded with proper pretreatment. Similar to T-1, Type A.

PRESSURE VESSEL QUALITY:
PVQ material is manufactured to specific ASTM standards in order to produce a superior quality carbon steel plate of consistent ant controlled properties designed to withstand the internal pressure of pressure vessels, boilers, and valves. PVQ material is stocked in three basic grades.

ASTM-A285 Grade C – this is a moderate strength product designed for stationary service pressure vessels and boilers; stocked through 2" thick; good welding and forming properties.

ASTM-A515 – this product has higher mechanical properties designed for intermediate and high termperature service in pressure vessels and boilers; weldable with proper techniques; has a coarse grain structure and is silicon-killed.

ASTM-A516 – this product is designed for low temperature application, requiring improved, notch toughness; has a fine grain structure and is silicon-killed; mechanical properties are similar to a A-516; weldable with proper techniques.

SHEARED or FLAME CUT PLATES
LOW CARBON, COMMERCIAL QUALITY OR ASTM-A-36

STOCK LENGTHS
1¼" Thick and Lighter - 8', 10', 12', 20'. 30' and 40'
Over 1¼ Thick – 10', 20', 30' and 40'

Size in Inches	Weight per Sq. Ft.	Wight per Ft. Lbs.
3/16 x 30 to 72–	See H. R. Sheets	
84	7.66	54.62
96		61.28
1/4 x 36	10.21	30.63
48		40.84
60		51.05
72		61.26
84		71.47
96		81.68
120		102.10
5/16 x 36	12.76	38.28
48		51.04
60		63.80
72		76.56
84		89.32
96		102.08
120		127.60
3/8 x 36	15.32	45.96
48		61.28
60		76.60
72		91.92
84		107.24
96		122.56
120		153.20
7/16 x 48	17.87	71.48
72		107.22
84		125.09
96		142.96
1/2 x 36	20.42	61.26
48		81.68
60		102.10
72		122.52
84		142.94
96		163.36
120		204.20

Size in Inches	Weight per Sq. Ft.	Wight per Ft. Lbs.
9/16 x 84	22.97	160.79
96		183.76
5/8 x 48	25.53	102.12
60		127.65
72		153.18
84		178.71
96		204.24
120		255.30
11/16 x 96	28.08	224.64
3/4 x 36	30.63	91.89
48		122.52
60		153.15
72		183.78
84		214.41
96		245.04
120		306.30
7/8 x 48	35.74	142.96
60		178.70
72		214.44
84		250.18
96		285.92
1 x 36	40.84	122.52
48		163.36
60		204.20
72		245.04
84		285.88
96		326.72
120		408.40
1 1/8 x 72	45.95	275.70
84		321.65
96		367.60
1 1/4 x 48	51.05	204.20
60		255.55
72		306.30
84		357.35
96		408.40

(continued on following page)

SHEARED or FLAME CUT PLATES
LOW CARBON, COMMERCIAL QUALITY OR ASTM-A-36

STOCK LENGTHS
1¼" Thick and Lighter - 8', 10', 12', 20'. 30' and 40'
Over 1¼ Thick – 10', 20', 30' and 40'

Size in Inches	Weight per Sq. Ft.	Wight per Ft. Lbs.
1 3/16 x 72	56.16	336.36
84		393.12
96		449.28
1 1/2 x 48	61.26	245.04
60		306.30
72		367.56
84		428.82
96		490.08
120		612.60
1 5/8 x 72	66.37	398.22
84		464.59
96		530.96
1 3/4 x 72	71.47	428.82
84		500.29
96		571.76
1 7/8 x 96	76.58	612.54
2 x 48	81.68	326.72
60		408.40
72		490.08
84		571.76
96		653.44
2 1/4 x 72	91.89	551.34
84		643.23
96		735.12
2 3/8 x 96	97.00	776.00
2 1/2 x 48	102.10	408.40
60		510.50
72		612.60
84		714.70
96		816.80
2 3/4 x 72	112.31	673.86
84		786.17
96		898.48
3 x 48	122.52	490.08
60		612.60
72		735.12
84		857.64
96		980.16
3 1/4 x 48	132.72	530.88
60		663.60
72		796.32
84		929.04
96		1061.76
3 1/2 x 60	142.93	714.65
72		857.58
84		1000.51
96		1143.44
3 3/4 x 72	153.14	918.84
84		1071.98
96		1225.12

Size in Inches	Weight per Sq. Ft.	Wight per Ft. Lbs.
4 x 60	163.35	816.75
72		980.10
84		1143.45
96		1306.80
4 1/4 x 84	173.56	1214.92
96		1388.80
4 1/2 x 60	183.77	918.85
72		1102.62
84		1286.39
96		1470.16
4 3/4 x 72	193.98	1163.88
84		1357.86
96		1551.84
5 x 60	204.19	1020.95
72		1225.14
84		1429.33
96		1633.52
5 1/2 x 72	224.61	1347.66
84		1572.88
96		1796.88
6 x 60	245.03	1225.15
72		1470.18
84		1715.21
96		1960.24
6 1/2 x 84	265.45	1858.15
96		2123.60
7 96	285.87	2286.96
7 1/2 x 96	306.29	2450.32
8 x 96	326.71	2613.68
8 1/2 x 96	347.13	2777.04
9 x 96	367.55	2940.40
10 x 72	408.38	2450.28
84		2858.66
96		3267.04
12 x 72	490.06	2940.36
14 x 72	571.80	3430.80
14 5/8 x 72	597.29	3583.74
16 5/8 x 72	679.29	4074.00
18 5/8 x 72	760.70	4564.20

MEDIUM CARBON STEEL PLATES

STOCK LENGTHS – 10’, 20’. and 30’

.40 to.50 carbon – Special Killed

Size in Inches	Weight per Sq. Ft.	Wight per Ft. Lbs.	Size in Inches	Weight per Sq. Ft.	Weight per Ft. Lbs.
3/16 x 48	7.66	30.64	1¾ x 48	71.47	285.88
72		45.96	84		500.29
¼ x 48	10.21	40.84	2 x 48	81.68	326.72
60		51.05	84		571.76
72		61.26	2¼ x 48	91.89	367.56
5/16 x 48	12.76	51.04	84		643.23
72		76.56	2½ x 48	102.10	408.40
⅜ x 48	15.32	61.28	84		714.70
72		91.92	2¾ x 48	112.31	449.24
7/16 x 72	17.87	107.22	84		786.17
½ x 48	20.42	81.68	3 x 48	122.52	490.08
96		163.36	84		857.64
⅝ x 72	25.53	153.18	3¼ x 84	132.72	929.04
			3½ x 48	142.93	571.72
¾ x 96	30.63	245.02	84		1000.51
⅞ x 84	35.74	250.18	3¾ x 84	153.14	1071.98
1 x 48	40.84	163.36	4 x 84	163.35	1143.45
84		285.88	4¼ x 84	173.56	1214.92
1⅛ x 48	45.95	183.80	4½ x 48	183.77	735.08
84		321.25	84		1286.39
1¼ x 48	51.05	204.20	5 x 84	204.19	1429.33
84		357.35	5½ x 84	224.61	1572.27
1⅜ x 48	56.16	224.64	6 x 48	245.03	980.12
84		393.12	84		1715.21
1½ x 48	61.26	245.04	7 x 84	285.87	2001.09
84		428.82	8 x 84	326.71	2286.97
1⅝ x 84	66.37	464.59			

HIGH CARBON STEEL PLATES

AISI-C-1095 Silicon Killed

STOCK LENGTHS – 10’, 12’, and 20’

Size in Inches	Weight per Sq. Ft.	Wight per Ft. Lbs.	Size in Inches	Weight per Sq. Ft.	Wight per Ft. Lbs.
3/16 x 48	7.66	30.64	⅜ x 48*	15.32	
¼ x 48*	10.21	40.84	60		61.28
60		51.05	72		76.60
72		61.06			91.92

*Also stocked as AISI-C-1060

HIGH STRENGTH LOW ALLOY

ASTM-A-572 – Grade 50 – Ex-Ten 50, INX-50 or Equivalent
ASTM-A-656 – Grade 50 – Maxi-Form 50, HiForm 50 or Equivalent

HIGH STRENGTH LOW ALLOY CORROSION RESISTANT

ASTM-A-242 and ASTM-A-588 – Corten or Equivalent
ASTM-A-441 – Tri-Ten or Equivalent

STOCK LENGTHS in Feet 10’, 20’

Size in Inches	Weight per Sq. Ft.	Size in Inches	Weight per Sq. Ft.
3/16 x 72	7.66	1¼ x 84	51.05
96		96	
¼ x 72	10.21	1⅜ x 84	56.16
84		96	
96		1½ x 84	61.26
5/16 x 72	12.76	96	
84		1¾ x 84	71.47
96		96	
⅜ x 72	15.32	2 x 84	81.68
84		96	
96		2¼ x 96	91.89
½ x 72	20.42	2½ x 84	102.10
84		2¾ x 96	112.31
96		3 x 84	122.52
⅝ x 84	25.53	96	
96		3¼ x 96	132.72
¾ x 72	30.63	3½ x 84	142.93
84		96	
96		4 x 84	163.35
⅞ x 96	35.74	96	
1 x 48	40.84	4½ x 84	183.77
84		96	
96		5 x 84	204.19
120		96	
		6 x 72	245.03
		84	

UNIVERSAL MILL EDGE PLATES

LOW CARBON, COMMERCIAL QUALITY OR ASTM-A-36

Size in Inches	Wight per Ft. Lbs.	Size in Inches	Wight per Ft. Lbs.
3/16 x 12	& less– See H.R. Strip	½ x 9	15.32
		10	17.02
		12	20.42
¼ x 9	7.66	⅝ x 9	19.15
10	8.51	10	21.28
		12	25.53
5/16 x 10	10.63	¾ x 9	22.97
12	12.76	10	25.53
		12	30.63
⅜ x 9	11.49	1 x 9	30.63
10	12.77	10	34.03
12	15.32	12	40.84

ABRASION RESISTING STEEL PLATE

AR 225 AR 360 T1, Type A, 321 Min. Bhn

STOCK LENGTHS IN FEET

AR 225:
- ½" thick and under – 72" wide and narrower: 8, 10, 12, 20, 30
- ½" thick and under – 84" wide and over: 10, 20, 30
- ⅝" thick and over, all widths – 20, 30

AR 360 and T-1, Type A, 321 min. Bhn: all sizes – 10, 20

Size in Inches			Weight per Sq. Ft.	AR 225	AR 360	T-1 Type A 321 Brinnell
3/16	x	48	7.66	x	x	...
		60		x	x	...
		72		x	x	...
		84		x	x	...
		96		x	x	x
¼	x	48	10.21	x	x	...
		60		x	x	...
		72		x	x	...
		84		x	x	x
		96		x	x	x
5/16	x	48	12.76	x	...	...
		60		x	x	...
		72		x	x	...
		84		...	x	...
		96		x	x	x
⅜	x	48	15.32	x	x	...
		60		x	x	...
		72		x	x	...
		84		x	x	x
		96		x	x	x
½	x	48	20.42	x	x	...
		60		x	x	...
		72		x	x	...
		84		x	x	...
		96		x	x	x
⅝	x	84	25.53	x	...	x
		96		x	x	x
¾	x	84	30.63	x	x	...
		96		x	x	x
⅞	x	96	35.74	x	...	x
1	x	84	40.84	...	x	...
1¼	x	84	51.05	...	x	...
		96		...	...	x
1½	x	84	61.26	...	x	...
		96		...	...	*x
1¾	x	96	71.47	...	...	*x
2	x	96	81.68	...	x	*x

*T-1 Type B 321 Brinnell

CONSTRUCTION ALLOYS
QUENCH AND TEMPERED ALLOY PLATES

ASTM-A-514, Grade B – ASTM-A-709, Through 1¼" Thick
ASTM-A-514 Grade H – ASTM-A-709, Through 2" Thick
ASTM-A-514, Grade F – ASTM-A-709, Through 2½" Thick
ASTM-A-514 Grade Q – Through 6" Thick

STOCK LENGTHS – 10', 20'

Size in Inches			Weight per Sq. Ft.
3/16	x	72	7.66
		96	
¼	x	72	10.21
		84	
		96	
5/16	x	72	12.76
		84	
		96	
⅜	x	72	15.32
		84	
		96	
½	x	72	20.42
		84	
		96	
⅝	x	84	25.53
		96	
¾	x	72	30.63
		84	
		96	
		120	
⅞	x	96	35.74
1	x	48	40.84
		84	
		96	
		120	

Size in Inches			Weight per Sq. Ft.
1¼	x	84	51.05
		96	
1⅜	x	84	56.16
		96	
1½		84	61.26
		96	
1¾	x	84	71.47
		96	
2	x	84	81.68
		96	
2¼	x	96	91.89
2½	x	84	102.10
2¾	x	96	112.31
3	x	84	122.52
		96	
3¼	x	96	132.72
3½	x	84	142.93
		96	
4	x	84	165.35
		96	
4½	x	84	183.77
		96	
5	x	84	204.19
		96	
6	x	72	245.03
		84	

PRESSURE VESSEL QUALITY PLATES

ASTM A-285 Grade C / ASME SA-285 Grade C
Tensile Strength 55,000 to 65,000 PSI

STOCK LENGTHS
10’, 20’, 30’

Size in Inches	Weight per Sq. Ft.	Weight per Ft. Lbs.
3/16 x 72	7.66	45.96
84		53.62
96		61.28
1/4 x 48	10.21	40.84
60		51.05
72		61.26
84		71.47
96		81.68
120		102.10
5/16 x 60	12.76	63.80
72		76.56
84		89.32
96		102.08
120		127.60
3/8 x 60	15.32	76.60
72		91.92
84		107.24
96		122.56
120		153.20
7/16 72	17.87	107.22
120		178.70
1/2 x 60	20.42	102.10
72		122.52
84		142.94
96		163.36
120		204.20
5/8 x 72	25.53	153.18
84		178.71
96		204.24
120		255.30
3/4 x 60	30.63	153.15
84		214.41
96		245.04
120		306.30
7/8 x 84	35.74	250.18
96		285.92
120		357.40
1 x 84	40.84	285.88
96		326.72
120		408.20
1 1/8 x 84	45.95	321.65
96		367.60
1 1/4 x 84	51.05	357.35
96		408.40
1 1/2 x 84	61.26	428.82
96		490.08
1 3/4 x 84	71.47	500.29
96		571.76
2 x 96	81.68	653.44

PRESSURE VESSEL QUALITY PLATES

ASTM-A-515 GR 70 / ASME SA-215 GR. 70
and
ASTM A-515 GR 70 / ASME SA-515 GR. 70

STOCK LENGTHS – 10’, 20’ and 30’

Size in Inches	Weight per Sq. Ft.	Weight per Ft. Lbs.
3/16 x 96	7.66	61.28
1/4 x 96	10.21	81.68
5/16 x 96	12.76	102.08
3/8 x 96	15.32	122.56
7/16 x 96	17.87	142.96
1/2 x 96	20.42	163.36
9/16 x 96	22.97	183.76
5/8 x 96	25.53	204.24
3/4 x 96	30.63	245.04
7/8 x 96	35.74	285.92
1 x 96	40.84	326.72
1 1/8 x 96	45.95	367.60
1 1/4 x 96	51.05	408.40
1 3/8 x 96	56.16	449.28
1 1/2 x 96	61.26	490.08
1 5/8 x 96	66.37	530.96
1 3/4 x 96	71.47	571.76
2 x 96	81.68	653.44
2 1/4 x 96	91.89	735.12
2 1/2 x 96	102.10	816.75
2 3/4 x 96	112.31	898.48
3 x 96	122.52	980.10
3 1/4 x 96	132.72	1061.76
3 1/2 x 96	142.93	1143.44
3 3/4 x 96	153.14	1225.12
4 x 96	165.35	1306.80
4 1/2 x 96	183.77	1470.16
4 3/4 x 96	193.98	1551.84
5 x 96	204.19	1633.52
5 1/2 x 96	224.61	1796.88
6 x 96	245.03	1960.24

FREE MACHINING PLATES

LOW CARBON OR MEDIUM CARBON

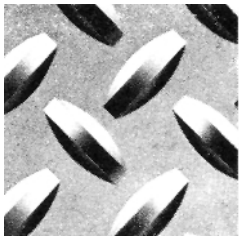
STOCK LENGTHS – 10’, 20’ and 30’

Size in Inches	Weight per Sq. Ft.	Weight per Ft. Lbs.
1/4 x 84	10.21	71.47
5/16 x 84	12.76	89.32
3/8 x 84	15.32	107.24
1/2 x 84	20.42	142.94
5/8 x 84	25.53	178.71
3/4 x 84	30.63	214.41
7/8 x 84	35.74	250.18
1 x 84	40.84	285.88
1 1/8 x 84	45.95	321.65
1 1/4 x 84	51.05	357.35
1 3/8 x 84	56.16	393.12
1 1/2 x 84	61.26	428.82
1 5/8 x 84	66.37	464.59
1 3/4 x 84	71.47	500.29
2 x 84	81.68	571.76
2 1/4 x 84	91.89	643.23
2 1/2 x 84	102.10	714.70
2 3/4 x 84	112.31	786.17
3 x 84	122.52	857.64
3 1/4 x 84	132.72	929.04
3 1/2 x 84	142.93	1000.51
4 x 84	163.35	1143.45
4 1/4 x 84	173.66	1214.92
4 1/2 x 84	183.77	1286.39
4 3/4 x 84	193.98	1357.86
5 x 84	204.19	1429.33
5 1/2 x 84	224.61	1572.27
6 x 84	245.03	1715.21

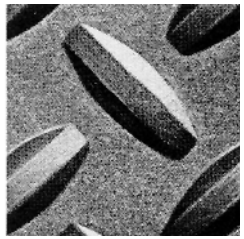
STEEL FLOOR PLATE

FOUR WAY

MEDIUM PATTERN
16 Ga. to 1/8” Thick Incl.



LARGE PATTERN
3/16” to 1” Thick Incl.



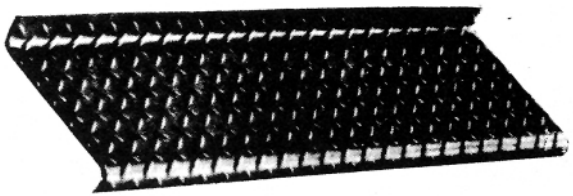
STOCK LENGTHS
16 GA. TO 14 Ga. Incl. – 8’, 10’, 12’
12 Ga. to ⅛” Thick Incl. – 8’, 10’, 12’, 20’
3⁄16” to ¾” Thick Incl. – 8’, 10’, 12’, 20’, 30’, 40’

*Size		Weight per Sq. Ft.	Weight per Ft. Lbs.
16 Ga. x	36	3.00	9.00
	48		12.00
	60		15.00
14 Ga. x	36	3.75	11.25
	48		15.00
	60		18.75
14 Ga. x	36	5.25	15.75
	48		21.00
	60		26.25
⅛” x	36	6.16	18.48
	48		24.64
	60		30.80
	72		36.96
3⁄16” x	36	8.71	26.13
	48		34.84
	60		43.55
	72		52.26
	84		60.97
¼” x	36	11.26	33.78
	48		45.04
	60		56.30
	72		67.56
	84		78.82
	96		90.08

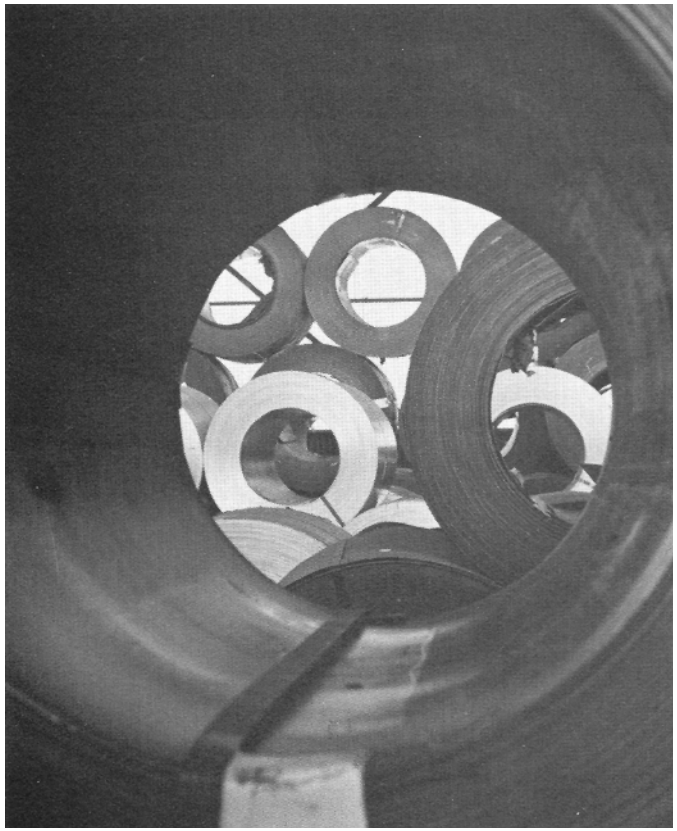
*Size		Weight per Sq. Ft.	Weight per Ft. Lbs.
5⁄16” x	36	13.81	41.43
	48		55.24
	60		69.05
	72		82.86
⅜” x	36	16.37	49.11
	48		65.48
	60		81.85
	72		98.22
	84		114.59
	96		130.96
½” x	42	21.47	75.15
	48		85.88
	60		107.35
	72		128.82
	84		150.29
	96		171.76
⅝” x	48	26.58	106.32
	72		159.48
¾” x	48	31.68	126.72
	72		190.08
1” x	72	41.89	251.34
	96		335.12

*Thickness is measured exclusive of projections

STEEL FLOOR PLATE SAFETY TREADS



Treads and landings made from Steel Floor Plate give additional safety, rigidity and long life. Made to your specifications for use on straight or winding stairways.



SHEETS & COILS

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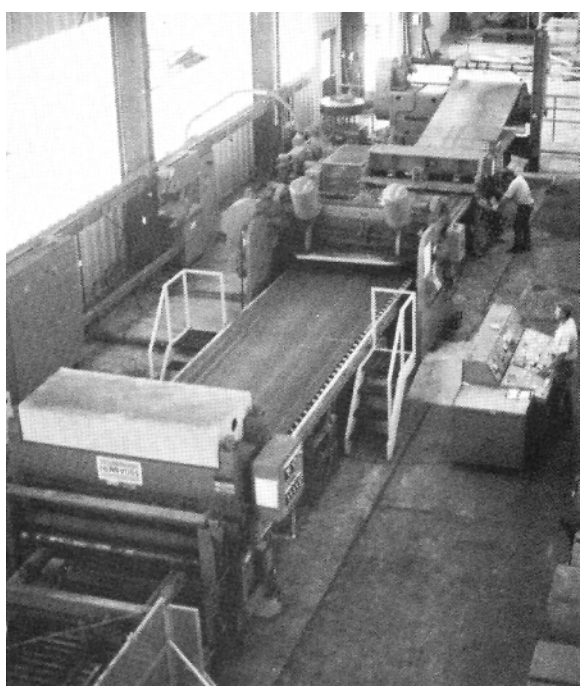
–your source of cut-to-length sheets – no waste – reduced production costs

BLANKING	PUNCHING
CUTTING TO LENGTH – from coils	ROLLING
FORMING	SHEARING
NOTCHING	WELDING



Precision cut-to-length line

CARBON STEEL SHEETS

HOT ROLLED:

Hot Rolled, Commercial Quality – this product is the lowest cost steel sheet; generally soft enough to take a 180˚ bend without cracking, and ductile enough for mild drawing; surface will have light and tight oxide scale; produced to ASTM-A-569.

Hot Rolled, Pickled and Oiled – this product is a Hot Rolled sheet which has been acid pickled to remove any mill oxide resulting in a clean scale-free surface; pickling reduces die wear, and, thus, is desired for drawing and stamping operations; the scale-free surface is also an advantage for welding, pundhing, and painting produced to ASTM-A-560.

Hot Rolled, .40/.50 Carbon – the higher carbon content increases the yield strength about 50% over Commercial Quality; abrasion resistance is also improved; heat treatable for higher hardness levels, especially surface hardness; formability and weldability less than Commercial Quality.

COLD ROLLED:

Cold Rolled – this product has additional mill processes which result in a more controlled thickness, finish and mechanical properties than Hot Rolled; the matte finish is an excellent base for all types of painting operations; the annealed and scale-free surface are excellent for stamping, moderated drawing and forming; can be readily welded; produced to ASTM-A-366. Also available as special killed, drawing quality, produced to ASTM-A-620, for severe forming and drawing operations. Note: will not age harden.

COATED SHEETS:

Galvanized – this product is the most versatile, low cost corrosion resistant steel; it is produced from Hot Rolled, Pickled steel, which has been further processed, annealed and zinc coated in a continuous hot dip process; the zinc, corrosion-resistant coating will not peel or flake in most forming operations; standard thickness coating is G90 (1.25 oz.), also available G60 (light commercial coating); 14 guage and heavier is produced to ASTM-A-526, commercial quality; 16 guage and lighter is produced to ASTM-A527, lock forming quality

Galvanized, Painting Quality – this product is a Galvanized sheet which has been thermal treated to provide a paintable product while still maintaining a zinc-corrosion resistant base. These painting-quality Galvanized sheets are available in a variety of finishes regarding applicaition and specifications. Three of the more common paintable galvanized products are:

> **Galvannealed** – this is a thermal treated product which bonds the zinc coating to the steel base; the result is a spangle free surface abailable for painting with no surface preparation; the surface is dull gray in appearance.
>
> **Paintgrip**– this product is a standard Galvanized sheet with a phosphate film added to the surface for paint adherence; while the spangle pattern is reduced on this product, the finish is brighter than Galvannealed.
>
> **Aluminized–**this product is a cold rolled sheet which has been hot dip coated on both sides with and aluminum-silicon alloy; this coating process gives Aluminized the appearance and heat resistance of aluminum with the strength of carbon steel. This product can be moderately formed, spun and drawn, can be readily welded using conventoinal methods; available in both T1-40 and T1-25 coating thicknesses, produced to ASTM-A-643.

HIGH STRENGTH STEEL SHEETS

HOT ROLLED:
ASTM-A-570 – this grade is ordered when structural strength in the finished piece is the primary requirement; applications usually involve roll forming or press brake forming; can be ordered in minimum strength levels of 30,000 through 50,000 Psi minimum yield

ASTM-A -606 – this grade has excellent atmospheric corrosion resistance properties – four to five times greater than carbon steel – the unpainted surface has a tightly adherent oxide surface which hinders further oxidation; good weldability and formability; usually furnished to a 50,000 Psi minimum yield; grade 950D also conforms to SAE J410C

ASTM-A-607 – this grade is the basic High Strength Low Alloy (HSLA) steel made to specific minimum yields from 45,000 Psi through 60,000 Psi; good formability and weldabilty; grade 45X and 50X also conform to SAE J410C.

ASTM-A-715 – this grade has low carbon and sulfur and low to medium manganese, combined with fine grain and special killed qualities; this combination offers increased forming and bending properties, improved toughness and fatigue resistance, and good weldability along with its high strength properties; can be ordered in minimum strength levels of 40,000 Psi through 70,000 Psi.

ASTM-A-570, Grade 36: Structural Quality
ASTM-A-606, Type 4, Grade 950-D – Corten-A or Equivalent
ASTM-A-607 – Grade 50 – Exten-50, INX-50 or Equivalent
ASTM-A-715, Grade 50 – High-Form-50 or Equivalent

Fabrication Bending Information
for minimum inside radius, times material thickness

ASTM-A-606 – 16 guage and lighter,1T, heavier than 16 gauge, 2T.

ASTM-A-607: 7 guage and lighter. Grades 42 and 45, 1T; Grades 50 and 55, 1½ T; Grade 60, 2T, Grade 65, 3T, Grade 70, 3½ T.

ASTM-A-715: All thicknesses, ½T.

Note: Bending which restricts metal flow may require more liberal bend radii.

ABRASION RESISTING:
AR 225 – this grade is an as rolled product of medium carbon, high manganese content; surface hardness range is 200/250 Bhn; can be welded, machined, and formed satisfactorily.

CUT-TO-LENGTH SHEETING LINES

–several of the largest in the industry – assures you of steel cut to your exact manufacturing requirements – waste is no longer a problem – production costs can be reduced.

SPECIFICATIONS

MATERIAL:	Hot Rolled Hot Rolled Pickled & Oiled Cold Rolled Galvanized Galvannealed Aluminized
GAUGE RANGES:	30 gauge through ¼” Maximum – 73¾” Minimum – 10”
WIDTHS:	Maximum Weight – 20 tons Minimum – 10”
SIZE OF COIL:	Maximum Weight – 20 tons Outside Diameter – 72” Inside Diameter – 24”-30”
LENGTHS AVAILABLE:	Maximum – 420” Minimum – 24”

Additional Processing Information on Application.

HOT ROLLED SHEETS IN COILS

Commercial Quality – Low Carbon
ASTM-A-569

Guage & Size in Inches	Est. Wt. per Lin. Ft.
¼ Ga. (.250”)	
Wt. per Sq. Ft. 10.210	
x 36	30.63
x 48	40.84
x 60	51.05
x 72	61.06
4 Ga. (.224”)	
Wt. per Sq. Ft. 9.375	
x 48	37.5
7 Ga. (.179”)	
Wt. per Sq. Ft. 7.50	
x 36	22.5
x 48	30.0
x 60	37.5
x 72	45.0
8 Ga. (.164”) 6.875	
Wt. per Sq. Ft. 6.875	
x 48	27.5
x 60	34.4
9 Ga. (.149”)	
Wt. per Sq. Ft. 6.250	
x 48	25.0
10 Ga. (.134”)	
Wt. per Sq. Ft. 5.625	
x 30	14.0
x 36	16.9
x 48	22.5
x 60	28.2
x 66	31.0
x 72	33.8

Guage & Size in Inches	Est. Wt. per Lin. Ft.
11 Ga. (.120”)	
Wt. per Sq. Ft. 5.000	
x 36	12.5
x 48	15.0
x 60	20.0
x 72	25.0
12 Ga. (.105”)	30.0
Wt. per Sq. Ft. 4.375	
x 30	10.9
x 36	13.1
x 48	17.5
x 60	21.9
x 72	26.3
14 Ga. (.075”)	
Wt. per Sq. Ft. 3.125	
x 30	7.8
x 36	9.4
x 42	10.9
x 48	12.5
x 54	14.1
x 60	15.6
x 72	18.8
16 Ga. (.060”)	
Wt. per Sq. Ft. 2.500	
x 30	6.3
x 36	7.5
x 42	8.8
x 48	10.0
x 60	12.5

HOT ROLLED SHEETS IN COILS

Commercial Quality – Low Carbon
ASTM-A-569

Guage & Size in Inches	Est. Wt. per Lin. Ft.
4 Ga. (.224")	
Wt. per Sq. Ft. 10.210	
48 x 96	300.0
48 x 120	375.0
48 x 144	450.0
7 Ga. (.179")	
Wt. per Sq. Ft. 7.50	
36 x 96	180.0
36 x 120	225.0
36 x 144	270.0
48 x 96	240.0
48 x 120	300.0
48 x 144	360.0
48 x 240	600.0
60 x 96	300.0
60 x 120	375.0
60 x 144	450.0
60 x 240	750.0
72 x 96	360.0
72 x 120	450.0
72 x 144	540.0
72 x 240	900.0
84 x 240	1050.0
8 Ga. (.164")	
Wt. per Sq. Ft. 6.875	
36 x 96	165.0
36 x 120	206.3
48 x 96	220.0
48 x 120	275.0
60 x 120	343.8
9 Ga. (.149")	
Wt. per Sq. Ft. 6.250	
48 x 96	200.0
48 x 120	250.0
10 G. (.134")	
Wt. per Sq. Ft. 5.625	
30 x 96	112.5
36 x 96	135.0
36 x 120	168.8
36 x 144	202.5
48 x 96	180.0
48 x 120	225.0
48 x 144	270.0
48 x 240	450.0
60 x 96	225.0
60 x 120	281.3
60 x 144	337.5
60 x 240	562.5
72 x 96	270.0
72 x 120	337.5
72 x 144	405.0
72 x 240	675.0
84 x 120	393.8
84 x 240	787.5
96 x 240	900.0

Guage & Size in Inches	Est. Wt. per Lin. Ft.
11 Ga. (.120")	
Wt. per Sq. Ft. 5.000	
30 x 96	100.0
36 x 96	120.0
36 x 120	150.0
36 x 144	180.0
48 x 96	160.0
48 x 120	200.0
48 x 144	240.0
48 x 240	400.0
60 x 96	200.0
60 x 120	250.5
60 x 144	300.0
60 x 240	500.0
72 x 96	240.0
72 x 120	300.0
72 x 144	360.0
72 x 240	600.0
84 x 120	350.0
84 x 240	700.0
96 x 240	800.0
12 Ga. (.105")	
Wt. per Sq. Ft. 4.375	
30 x 96	87.5
36 x 96	105.0
36 x 120	131.3
36 x 144	157.5
48 x 96	140.0
48 x 120	175.0
48 x 144	210.0
48 x 240	350.0
60 x 96	175.0
60 x 120	218.8
60 x 144	262.5
60 x 240	437.5
72 x 96	210.0
72 x 120	262.5
72 x 144	315.0
72 x 240	525.0
84 x 120	306.3
84 x 144	367.5
84 x 240	612.5
14 Ga. (.075")	
Wt. per Sq. Ft. 3.125	
30 x 96	62.5
30 x 120	78.1
36 x 96	75.0
36 x 120	93.8
36 x 144	112.5
48 x 96	100.0
48 x 120	125.0
48 x 144	150.0
48 x 240	250.0

(continued on following pages)

HOT ROLLED SHEETS

Commercial Quality – Low Carbon – ASTM-A-569

Guage & Size in Inches	Est. Wt. per Sheet
(continuerd from preceding pages)	
14 Ga. (.075")	
Wt. per Sq. Ft. 3.125	
60 x 96	125.0
60 x 120	156.3
60 x 144	187.5
60 x 240	312.5
72 x 120	187.5
72 x 144	225.0
72 x 240	372.0
16 Ga. (.060")	
Wt. per Sq. Ft. 2.50	
30 x 96	50.0
30 x 120	62.5

Guage & Size in Inches	Est. Wt. per Sheet
16 Ga. (.060")	
Wt. per Sq. Ft. 2.50	
36 x 96	60.0
36 x 120	75.0
36 x 144	90.0
42 x 96	70.0
42 x 120	87.5
42 x 144	105.0
48 x 96	80.0
48 x 120	100.0
48 x 144	120.0
60 x 96	100.0
60 x 120	125.0
60 x 144	150.0

PICKLED AND OLIED SHEETS IN COILS

Hot Rolled – Low Carbon – Mill Pickled – ASTM-A-569

Guage & Size in Inches	Est. Wt. per Lin. Ft.
(continued from preceding pages)	
4 Ga. (.224")	
Wt. per Sq. Ft. 9.375	
x 48	37.5
7 Ga. (.179")	
Wt. per Sq. Ft. 7.50	
x 48	30.0
x 60	37.5
x 72	45.0
10 Ga. (.134")	
Wt. per Sq. Ft. 5.625	
x 36	16.9
x 48	22.5
x 60	28.2
x 72	33.7
11 Ga. (.120")	
Wt. per Sq. Ft. 5.000	
x 36	15.0
x 48	20.0

Guage & Size in Inches	Est. Wt. per Lin. Ft.
x 60	25.0
x 72	30.0
12 Ga. (.105")	
Wt. per Sq. Ft. 4.375	
x 36	13.1
x 48	17.5
x 60	21.9
x 72	26.3
14 Ga. (.075")	
Wt. per Sq. Ft. 3.125	
x 36	9.4
x 48	12.5
x 60	15.6
x 72	18.8
16 Ga. (.060")	
Wt. per Sq. Ft. 2.50	
x 36	7.5
x 48	10.0

PICKLED AND OILED SHEETS

Hot Rolled – Low Carbon – Mill Pickled – ASTM-A-569

Guage & Size in Inches	Est. Wt. per Lin. Ft.
4 Ga. (.224")	
Wt. per Sq. Ft. 9.375	
48 x 96	300.0
48 x 120	375.0
7 Ga. (.179")	
Wt. per Sq. Ft. 7.50	
36 x 36	180.0
36 x 120	225.0
48 x 96	240.0
48 x 120	300.0
48 x 144	360.0
60 x 96	300.0

Guage & Size in Inches	Est. Wt. per Lin. Ft.
60 x 120	375.0
60 x 144	450.0
10 Ga. (.134")	
Wt. per Sq. Ft. 5.625	
36 x 96	135.0
36 x 120	168.0
48 x 96	180.0
48 x 120	225.0
48 x 144	270.0
60 x 96	225.0
60 x 120	281.0
60 x 144	337.5

(continued on following page)

PICKLED AND OILED SHEETS

Hot Rolled – Low Carbon
ASTM-A-569

Guage & Size in Inches	Est. Wt. per Sheets
(continued from preceding page)	
11 Ga. (.120”)	
Wt. per Sq. Ft. 5.00	
36 x 96	120.0
36 x 120	150.0
48 x 96	160.0
48 x 120	200.0
48 x 144	240.0
60 x 96	200.0
60 x 120	250.0
60 x 144	300.0
12 Ga. (.105”)	
Wt. per Sq. Ft. 4.375	
36 x 96	105.0
36 x 120	131.3
48 x 96	140.0
48 x 120	175.0
48 x 144	210.0
60 x 96	175.0
60 x 120	218.8
60 x 144	262.5
13 Ga. (.090”)	
Wt. per Sq. Ft. 3.75	
36 x 96	112.5
48 x 120	150.0
14 Ga. (.075”)	
Wt. per Sq. Ft. 3.125	
36 x 96	75.0
36 x 120	93.8
48 x 96	100.0
48 x 120	125.0
48 x 144	150.0
60 x 96	125.0
60 x 120	156.3
60 x 144	187.5
16 Ga. (.060”)	
Wt. per Sq. Ft. 2.50	
48 x 96	80.0
48 x 120	100.0
48 x 144	120.0

.40/.50 CARBON SHEETS

Hot Rolled Steel

Guage & Size in Inches	Est. Wt. per Sheets
7 Ga. (.179”)	
Wt. per Sq. Ft. 7.50	
48 x 120	300.00
60 x 240	750.00
10 Ga. (.134”)	
Wt. per Sq. Ft. 5.625	
36 x 120	168.8
48 x 120	225.0
60 x 144	337.5
11 Ga. (.120”)	
Wt. per Sq. Ft. 5.00	
36 x 120	150.0
48 x 120	200.0
12 Ga. (.105”)	
Wt. per Sq. Ft. 4.375	
36 x 120	131.3
48 x 120	175.0

COLD ROLLED SHEETS IN COILS

Low Carbon – Commercial Quality – Oiled
ASTM-A-366

Guage & Size in Inches	Est. Wt. per Lin. Ft.
11 Ga. (.120”)	
Wt. per Sq. Ft. 5.00	
x 48	20.00
60	25.00
72	30.00
12 Ga. (.105”)	
Wt. per Sq. Ft. 4.375	
x 48	17.50
14 Ga. (.075”)	
Wt. per Sq. Ft. 3.125	
x 48	12.50
16 Ga. (.060”)	
Wt. per Sq. Ft. 2.50	
x 48	10.00
60	12.50
72	15.00
18 Ga. (.048”)	
Wt. per Sq. Ft. 2.00	
x 48	8.00
20 Ga. (.036”)	
Wt. per Sq. Ft. 1.50	
x 36	4.50
48	6.00
60	7.50
72	9.00
22 Ga. (.030”)	
Wt. per Sq. Ft. 1.25	
x 48	5.00
24 Ga. (.024”)	
Wt. per Sq. Ft. 1.00	
x 48	4.00

COLD ROLLED SHEETS

Low Carbon – Commercial Quality – Oiled
ASTM-A-366

Guage & Size in Inches	Est. Wt. per Sheet
7 Ga. (.179”)	
Wt. per Sq. Ft. 7.50	
36 x 96	180.0
36 x 120	225.0
48 x 120	300.0
10 Ga. (.134”)	
Wt. per Sq. Ft. 5.625	
36 x 96	135.0
36 x 120	168.8
48 x 96	180.0
48 x 120	225.0
11 Ga. (.120”)	
Wt. per Sq. Ft. 5.00	
36 x 96	120.0
36 x 120	150.0
48 x 96	160.0
48 x 120	200.0
48 x 144	240.0
60 x 120	250.0
72 x 120	300.0
12 Ga. (.105”)	
Wt. per Sq. Ft. 4.375	
36 x 96	105.0
36 x 120	131.3
48 x 96	140.0
48 x 120	175.0
13 Ga. (.090”)	
Wt. per Sq. Ft. 3.75	
36 x 96	90.0
36 x 120	112.5
48 x 144	150.0
14 Ga. (.075”)	
Wt. per Sq. Ft. 3.125	
36 x 96	75.0
36 x 120	93.8
48 x 96	100.0
48 x 120	125.0
48 x 144	150.0
60 x 120	156.3
60 x 144	187.5
16 Ga. (.060”)	
Wt. per Sq. Ft. 2.50	
30 X 96	50.0
36 x 96	60.0
36 x 120	75.0
42 x 120	87.5
48 x 96	80.0
48 x 120	100.0
48 x 144	120.0
60 x 120	125.0
60 x 144	150.0
72 x 120	150.0
18 Ga. (.048”)	
Wt. per Sq. Ft. 2.00	
30 X 96	40.0
36 x 96	48.0
36 x 120	60.0
48 x 96	64.0
48 x 120	80.0
60 x 120	100.0
60 x 144	120.0
72 x 120	120.0

(continued on following pages)

Selected sizes also stocked as Drawing Quality – Special Killed – Refer to office

COLD ROLLED SHEETS

Low Carbon – Commercial Quality – Oiled
ASTM-A-366

Guage & Size in Inches	Est. Wt. per Sheet
(continued from preceding page)	
19 Ga. (.042”)	
Wt. per Sq. Ft. 1.75	
36 x 96	42.0
48 x 120	70.0
20 Ga. (.036”)	
Wt. per Sq. Ft. 1.50	
30 x 96	30.0
36 x 36	36.0
36 x 120	45.0
48 x 96	48.0
48 x 120	60.0
48 x 144	72.0
60 x 144	90.0
72 x 120	90.0
22 Ga. (.030”)	
Wt. per Sq. Ft. 1.25	
30 x 96	25.0
36 x 36	30.0
36 x 120	37.5
48 x 96	40.0
48 x 120	50.0
24 Ga. (.024”)	
Wt. per Sq. Ft. 1.00	
30 x 96	20.0
36 x 96	24.0
36 x 120	30.0
48 x 96	32.0
48 x 120	40.0
25 Ga. (.021”)	
Wt. per Sq. Ft. .875	
36 x 96	21.0
26 Ga. (.015”)	
Wt. per Sq. Ft. .750	
36 x 96	18.0
36 x 120	22.5
28 Ga. (.015”)	
Wt. per Sq. Ft. .625	
36 x 96	15.0
36 x 120	18.8

Selected sizes also stocked as Drawing Quality – Special Killed – Refer to office.

GALVANIZED SHEETS IN COILS

14 Gauge and Heavier – ASTM-A-526-G90 – Commercial Quality
16 Gauge and Lighter – ASTM-A-527-G90 – Lock Forming Quality

Guage & Size in Inches	Est. Wt. per Lin. Ft.
8 Ga. (.168”)	
Wt. per Sq. Ft. 7.031	
48	28.12
10 Ga. (.138”)	
Wt. per Sq. Ft. 5.781	
48	23.12
60	28.91
12 Ga. (.108”)	
Wt. per Sq. Ft. 28.12	
36	13.59
48	18.12
60	22.66
14 Ga. (.079”)	
Wt. per Sq. Ft. 3.281	
48	13.12
60	16.41
16 Ga. (.064”)	
Wt. per Sq. Ft. 2.656	
36	7.97
48	10.62
60	13.28
18 Ga. (.052”)	
Wt. per Sq. Ft. 2.156	
36	6.47
48	8.62
60	10.78
20 Ga. (.040”)	
Wt. per Sq. Ft. 1.656	
36	4.97
48	6.62
22 Ga. (.034”)	
Wt. per Sq. Ft. 1.406	
30	3.515
36	4.218
48	5.624
24 Ga. (.028”)	
Wt. per Sq. Ft. 1.156	
30	2.890
36	3.468
48	4.624
26 Ga. (.022”)	
Wt. per Sq. Ft. 0.906	
30	2.265
36	2.718
48	3.624
28 Ga. (.019”)	
Wt. per Sq. Ft. 0.781	
30	1.953
36	2.343
48	3.124
22 Ga. (.016”)	
Wt. per Sq. Ft. 0.656	
36	1.968

Selected sizes available as 40,000/42,000 Psi minimum yield – Refer to office.

GALVANIZED SHEETS

14 Gauge and Heavier – ASTM-A-526-G90 – Commercial Quality
16 Gauge and Heavier – ASTM-A-527-G90 – Lock Forming Quality

Guage & Size in Inches	Est. Wt. per Sheet
8 Ga. (.168”)	
Wt. per Sq. Ft. 7.031	
48 x 96	225.0
48 x 120	281.2
48 x 144	337.5
10 Ga. (.138”)	
Wt. per Sq. Ft. 5.781	
36 x 96	138.8
36 x 120	173.4
48 x 96	185.0
48 x 120	231.2
48 x 144	277.5
11 Ga. (.123”)	
Wt. per Sq. Ft. 5.156	
48 x 96	165.0
48 x 120	206.2
48 x 144	247.5
12 Ga. (.108”)	
Wt. per Sq. Ft. 4.531	
30 x 120	113.3
36 x 96	108.7
36 x 120	135.9
48 x 96	145.0
48 x 120	181.2
48 x 144	217.5
60 x 120	226.6
14 Ga. (.079”)	
Wt. per Sq. Ft. 3.281	
30 x 120	82.0
36 x 96	78.7
36 x 120	98.4
48 x 96	105.0
48 x 120	131.2
48 x 144	157.5
16 Ga. (.064”)	
Wt. per Sq. Ft. 2.656	
30 x 96	53.1
30 x 120	66.4
36 x 96	63.7
36 x 120	79.7
48 x 96	85.0
48 x 120	106.2
48 x 144	127.5
60 x 120	132.8
18 Ga. (.052”)	
Wt. per Sq. Ft. 2.156	
30 x 96	43.1
30 x 120	53.9
36 x 96	51.7
36 x 120	64.7
48 x 96	69.0
48 x 120	86.2
60 x 120	107.8
24 Ga. (.040”)	
Wt. per Sq. Ft. 1.656	
30 x 96	33.1
30 x 120	41.4
36 x 96	39.7
36 x 120	49.7
48 x 96	53.0
48 x 120	66.2
48 x 144	79.5
60 x 120	82.8
22 Ga. (.034”)	
Wt. per Sq. Ft. .1.406	
30 x 96	28.1
30 x 120	35.2
36 x 96	33.7
36 x 120	42.2
48 x 96	45.0
48 x 120	56.2
60 x 120	70.3
24 Ga. (.028”)	
Wt. per Sq. Ft. 1.156	
30 x 96	23.1
30 x 120	28.9
36 x 96	27.7
36 x 120	34.7
48 x 96	37.0
48 x 120	46.2
60 x 120	57.8
26 Ga. (.022”)	
Wt. per Sq. Ft. 0.906	
30 x 96	18.1
30 x 120	22.7
36 x 96	21.7
36 x 120	27.2
48 x 96	29.0
48 x 120	36.2
28 Ga. (.019”)	
Wt. per Sq. Ft. 0.781	
28 x 96	14.6
28 x 120	18.2
30 x 96	15.6
30 x 120	19.5
32 x 96	16.7
36 x 96	18.7
36 x 120	23.4
48 x 120	31.2
30 Ga. (.016”)	
Wt. per Sq. Ft. 0.656	
30 x 96	13.1
30 x 120	16.4
32 x 96	14.0
36 x 96	15.7
36 x 120	19.7

Selected sizes available as 40,000/42,000 Psi minimum yield – Refer to office.

GALVANIZED SHEETS

PAINTING QUALITY
GALVANNEALED SHEETS
14 Gauge and Heavier – ASTM-A-526 A-60
16 Gauge and Lighter – ASTM-A-527 A-60

PAINTGRIP GALVANIZED SHEETS
Minimum Spangle ASTM-A526 G-90

Guage & Size in Inches	Est. Wt. per Sheet
12 Ga. (.108")	
Wt. per Sq. Ft. 4.531	
48 x 120	181.2
14 Ga. (.079")	
Wt. per Sq. Ft. 3.281	
36 x 120	98.4
48 x 96	105.0
48 x 120	131.2
60 x 96	131.2
60 x 120	164.1
16 Ga. (.052")	
Wt. per Sq. Ft. 2.656	
36 x 96	63.7
36 x 120	79.7
48 x 96	85.0
48 x 120	106.2
16 Ga. (.052")	
Wt. per Sq. Ft. 2.156	
36 x 96	51.7
36 x 120	64.7
48 x 96	69.0
48 x 120	86.2
48 x 144	103.5

Guage & Size in Inches	Est. Wt. per Sheet
20 Ga. (.040")	
Wt. per Sq. Ft. 1.656	
36 x 96	39.7
36 x 120	49.7
48 x 96	53.0
48 x 120	66.2
48 x 144	79.5
22 Ga. (.034")	
Wt. per Sq. Ft. .1.406	
36 x 96	33.7
36 x 120	42.2
48 x 96	45.0
48 x 120	56.2
48 x 144	67.5
24 Ga. (.028")	
Wt. per Sq. Ft. 1.156	
36 x 96	27.7
36 x 120	34.7
48 x 96	37.0
48 x 120	46.2

Many sizes also available in coil.

ALUMINIZED SHEETS

ASTM-A-463 – Commercial Quality
Coating Weights: T1-40 and T1-25

Guage & Size in Inches	Est. Wt. per Sheet
12 Ga. (.108")	
Wt. per Sq. Ft. 4.488	
48 x 120	179.52
14 Ga. (.079")	
Wt. per Sq. Ft. 3.238	
48 x 120	129.52
52 x 120	140.31
60 x 120	161.90
17 Ga. (.058")	
Wt. per Sq. Ft. 2.363	
48 x 120	94.52

Guage & Size in Inches	Est. Wt. per Sheet
18 Ga. (.040")	
Wt. per Sq. Ft. 1.656	
48 x 120	84.52
21 Ga. (.037)	
Wt. per Sq. Ft. 1.488	
48 x 120	59.52
23 Ga. (.028")	
Wt. per Sq. Ft. 1.156	
48 x 120	49.52

All widths shown available in coil.

HIGH STRENGTH SHEETS

ASTM-A-570 – Grade 36 – Structural Quality
ASTM-A-606 – Type 4, – Grade 950 – Corten-A or Equivalent
ASTM-A-607 – Grade 50 – Exten-50, INX-50 or Equivalent
ASTM-A-715 – Grade 50 – Hi-Form-50 or Equivalent

Guage & Size in Inches	Est. Wt. per Sheet
7 Ga. (.179")	
Wt. per Sq. Ft. 7.50	
48 x 96	240.0
48 x 120	300.0
48 x 240	600.0
60 x 96	300.0
60 x 120	375.0
60 x 144	450.0
60 x 240	750.0
72 x 96	360.0
72 x 120	450.0
72 x 144	540.0
72 x 240	900.0
10 Ga. (.134")	
Wt. per Sq. Ft. 5.625	
48 x 120	225.0
48 x 144	270.0
48 x 240	450.0
60 x 120	281.3
60 x 144	337.5

Guage & Size in Inches	Est. Wt. per Sheet
60 x 192	450.0
60 x 240	562.5
72 x 120	337.5
72 x 144	405.0
72 x 240	675.0
11 Ga. (.120")	
Wt. per Sq. Ft. .5.00	
48 x 120	200.0
48 x 144	240.0
60 x 120	250.0
60 x 144	300.0
60 x 192	400.0
12 Ga. (.105")	
Wt. per Sq. Ft. 4.375	
36 x 120	131.3
36 x 144	157.5
48 x 120	175.0
48 x 144	210.0
60 x 120	218.8
60 x 144	262.5

ABRASION RESISTING STEEL SHEETS

AR 225

Guage & Size in Inches	Est. Wt. per Lin. Ft.
7 Ga. (.179")	
Wt. per Sq. Ft. 7.50	
48 x 240	600.0
60 x 120	375.0
60 x 240	750.0
72 x 120	450.0
72 x 240	900.0

Guage & Size in Inches	Est. Wt. per Lin. Ft.
10 Ga. (.134")	
Wt. per Sq. Ft. 5.625	
48 x 120	225.0
48 x 240	450.0
60 x 120	281.3
11 Ga. (.120")	
Wt. per Sq. Ft. .5.00	
48 x 120	200.0

SHEET THICKNESS TOLERANCES

Hot Rolled • HR P&O • Cold Rolled • Galvanized

Sheet weights are based on ordered thickness
at 41.82 lbs. per sqsuare foot per inch thick.

	Hot Rolled, HR P&O, Cold Rolled				Galvanized		
Gage No.	Dec. Equiv.	Toler. Range Hr, P&O	Toler. Range CR	Lbs. per Sq. Ft.	Dec. Equiv.	Toler. Range	Lbs. per Sq. Ft.
4	.224	.233 .215		9.375			
7	.179	.187 .171	.186 .172	7.500			
8	.164	.172 .156	.171 .157	6.875	.168	.177 .159	7.031
9	.149	.157 .141	.156 .142	6.250	.153	.162 .142	6.046
10	.134	.142 .126	.140 .128	5.625	.138	.147 .129	5.781
11	.120	.128 .112	.126 .114	5.000	.123	.132 .114	5.156
12	.105	.113 .097	.111 .099	4.375	.108	.117 .099	4.531
13	.090	.097 .083	.095 .085	3.750	.093	.101 .085	3.906
14	.075	.082 .068	.080 .070	3.125	.079	.087 .071	3.281
15	.067	.074 .060	.072 .062	2.812	.071	.077 .065	2.969
16	.060	.066 .054	.065 .055	2.500	.064	.070 .058	2.656
17	.054	.060 .048	.058 .050	2.250	.058	.063 .053	2.406
18	.048	.054 .042	.054 .052	2.000	.052	.057 .047	2.156
19	.042		.046 .038	1.750	.046	.051 .039	1.906
20	.036		.039 .033	1.500	.040	.044 .036	4.656
21	.033		.036 .030	1.375	.037	.041 .033	1.531
22	.030		.033 .027	1.250	.034	.038 .030	1.406
23	.027		.030 .024	1.125	.031	.035 .027	1.281
24	.024		.027 .021	1.000	.028	.032 .024	1.156
25	.021		.024 .018	.875	.025	.029 .021	1.031
26	.018		.020 .016	.750	.022	.025 .019	.906
27	.016		.018 .014	.688	.020	.023 .017	.844
28	.015		.017 .013	.625	.019	.022 .016	.781
29	.014		.016 .012	.562	.017	.020 .014	.719
30	.012		.014 .010	.500	.016	.019 .013	.656

Tolerances are based on 48” wide sheets; tolerance for wider sheets may be slightly greater.

Weight per square foot is based on 41.82 lbs. per square foot of thickness.

HOT ROLLED BARS

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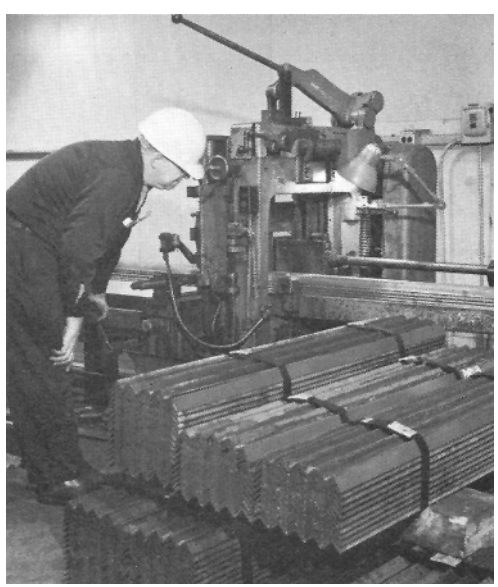
–your place to save on fabrication of bars– every service available with our “in-house” facilities and equipment

DRILLING	ROLLING
FORMING	SAW CUTTING
GALVANIZING	SHOT BLASTING
MITER CUTTING	THREADING
PUNCHING	WELDING



Angles cut to lengths – a “first step” process

HOT ROLLED BARS

COMMERCIAL GRADE:
ASTM-A-36 – Bars have become the standard specificaton for HR, including Squares. This grade is produced to a minimum yield of 36,000 Psi and tensile strength of 58,000/80,000 Psi. It is suitable for use in welded, riveted or bolted construction of buildings and bridges and other general construction.

MERCHANT QUALITY:
M1020 – A low carbon, general purpose steel commonly called “Mild Steel”. Suitable for forming, welding and many fabrication applications.

M1044 – Similar to C-1045, strength and heat treatment properties are approximately the same.

SPECIAL QUALITY:

LOW CARBON – CASE HARDENING

1018 – A general purpose low carbon steel with good case hardening properties. Specifications: AISI-C-1118, ASTM-A-576.

1117 – A low carbon, high manganese steel with superior case hardening properties, while retaining a ductile core. Specifications: AISI-C-1117, ASTM-A-576.

11L17 – Addition of lead improves machinability with no effect on case hardening properties. Specifications: AISI-C-11L17, ASTM-A-576.

MEDIUM CARBON – DIRECT HARDENING

1045 – Higher carbon level increases strength levels and heat treatability. Specifications: AISI-C-1045, ASTM-A-576.

1141 – A medium carbon, high manganese steel with increased machinability and heat treatability. Specifications: AISI-C-1141, ASTM-A-576.

11L41 – Addition of lead improves machinability with no effect on heat treatability. Specifications: AISI-C-11L41, ASTM-A-576.

1144 – Slightly higher carbon and sulphur levels improve machinability but restricts weldability. Specifications: AISI-C-1144, ASTM-A-576.

11L44 – Addition of lead improves machinability with no effect on mechanical properties. Specifications: AISI-C-11L44, ASTM-A-576

HIGH CARBON – SPRING STEEL

1095 – This special quality bar has high mechanical properties due the higher carbon content. This grade is also heat treatable to very high tensile and yield values.

GALVANIZED BARS – All shapes and analyses of Hot Rolled bars can be quickly galvanized. We will be glad to quote on your requirements.

REINFORCING BARS – Refer to Special Services Section.

HOT ROLLED ROUNDS

M1020 – Merchant Quality or ASTM A-36

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 20' Bar *M1020
3/16	.094	1.88
1/4	.167	3.34
5/16	.261	5.22
3/8	.376	7.52
7/16	.511	10.22
1/2	.668	13.36
9/16	.845	16.90
5/8	1.043	20.86
11/16	1.262	25.24
3/4	1.502	30.04
13/16	1.763	35.26
7/8	2.045	40.90
15/16	2.347	46.94
1	2.670	53.40
1 1/8	3.380	67.60
1 3/16	3.767	75.34
1 1/4	4.172	83.44
1 5/16	4.603	92.06
1 3/8	5.049	100.98
1 1/2	6.008	120.16
1 5/8	7.051	141.02
1 3/4	8.178	163.56
1 7/8	9.388	187.76
2	10.68	213.60
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 1/2	16.69	333.80
2 5/8	18.40	368.00
2 3/4	20.19	403.80
2 7/8	22.07	441.40

HOT ROLLED ROUNDS – Special Quality

AISI C1018 ASI C1045 AISI C1117 AISI C1141/1144

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet			
		C1018	C1045	C1117	C1141 C1144
3/8	0.376	...	20	20	...
1/2	0.668	20	20	20	20
9/16	0.845	...	20	...	...
5/8	1.04	20	20	20	20
3/4	1.50	20	20	20	20
13/16	1.76	...	...	...	20
7/8	2.04	20	20	20	20
1	2.67	20	20	20	20
1 1/8	3.38	20	20	20	20
1 3/16	3.77	20	...	...	...
1 1/4	4.17	20	20	20	20

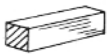
HOT ROLLED ROUNDS – Special Quality

AISI C1018 ASI C1045 AISI C1117 AISI C1141/1144

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet			
		C1018	C1045	C1117	C1141 C1144
1 5/16	4.60	20	...	...	...
1 3/8	5.05	20	20	20	20
1 1/2	6.01	20	20	20	20
1 5/8	7.05	20	20	20	20
1 3/4	8.18	20	20	20	20
1 7/8	9.39	20	20	20	20
2	10.68	20	20	20	20
2 1/8	12.06	20	20	20	20
2 1/4	13.52	20	20	20	20
2 3/8	15.06	20	20	20	20
2 1/2	16.69	20	20	20	20
2 5/8	18.40	20	20	20	20
2 3/4	20.19	20	20	20	20
2 7/8	22.07	20	20	20	20
3	24.03	20	20	20	20
3 1/8	26.08	20	20	20	20
3 1/4	28.21	20	20	20	20
3 3/8	30.42	20	20	20	20
* 3 1/2	32.71	20	20	20	20
3 5/8	35.09	20	20	20	20
3 3/4	37.55	20	20	20	20
3 7/8	40.10	20	20	20	20
4	42.73	20	20	20	20
4 1/8	45.44	20	20	20	20
4 1/4	48.23	20	20	20	20
4 3/8	51.11	20	...	...	20
4 1/2	54.08	20	20	20	20
4 5/8	57.12	20	20	20	20
4 3/4	60.25	20	20	20	20
5	66.76	20	20	20	20
5 1/4	73.60	20	20	20	20
5 1/2	80.78	20	20	20	20
5 3/4	88.29	20	20	20	20
6	96.13	20	20	20	20
6 1/8	100.18	20	20	...	...
6 1/4	104.31	20	20	20	20
6 1/2	112.82	20	20	20	20
6 3/4	121.67	20	20	20	20
7	130.85	20	20	20	20
7 1/4	140.36	20	20	20	20
7 1/2	150.21	20	20	20	20
7 3/4	160.39	20	20	20	20
8	170.90	20	20	20	20
8 1/4	181.75	20	20	20	.....
8 1/2	192.93	20	20	20	.....
8 3/4	204.45	20	20	.....	.....
9	216.30	20	20	20	.....
9 1/2	241.00	20	20	20	.....
10	267.00	20	20		

*On 3½" and larger, stock lengths also include 10 ft.

Additional sizes are available up to 24" diameter; this material is forged and rough turned ¼" to ¾" oversize for machining to required finished size.



HOT ROLLED SQUARES

M1020 Merchant Quality or ASTM A36
C1018 & C1045 Special Qyuality

Size in Inches	Weight per Ft. Lbs.	M1020/A-36 Est. Wt. 20' Bar	C1018 Est. Wt. 20' Bar	C1045 Est. Wt. 20' Bar
3/8	.478	9.56	....	....
7/16	.651	13.02	....	....
1/2	.850	17.00	....	....
9/16	1.076	21.52	....	....
5/8	1.329	26.58	....	....
3/4	1.914	38.28	....	38.28
7/8	2.605	52.10	....	52.10
1	3.402	68.04	....	68.04
1 1/8	4.306	86.12	....	86.12
1 1/4	5.316	106.32	....	106.32
1 3/8	6.432	128.64	....	....
1 1/2	7.655	153.10	....	153.10
1 5/8	8.978	179.56	....	....
1 3/4	10.413	208.56	....	208.26
1 7/8	11.95	239.00	....	239.00
2	13.60	272.00	....	272.00
2 1/4	17.21	344.20	....	344.20
2 1/2	21.25	425.00	....	425.00
2 3/4	25.71	514.20	....	514.20
3	30.60	....	612.00	612.00
3 1/4	35.91	....	718.20	718.20
3 1/2	41.65	....	833.00	833.00
3 3/4	47.81	....	956.20	956.20
4	54.40	....	1088.00	1088.00
4 1/2	68.85	....	1377.00	1377.00
5	85.00	....	1700.00	1700.00
6	122.40	....	2448.00	2488.00

HOT ROLLED HALF OVALS

M1020 Merchant Quality or ASTM A36

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 20' Bar
1 X 1/4	.594	11.88
1 1/4 X 5/16	.928	18.56
1 1/2 X 5/16	1.099	21.98
1 1/2 X 7/16	1.560	31.20
1 3/4 X 7/16	1.819	36.38
2 X 1/2	2.376	47.52

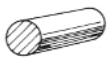
HOT ROLLED HALF ROUNDS

M1020 Merchant Quality or ASTM A36

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 20' Bar
1/2	.334	6.88
5/8	.522	10.44
3/4	.751	15.02
7/8	1.022	20.44
1	1.335	26.70
1 1/4	2.086	41.72
1 1/2	3.004	60.08
1 3/4	4.089	81.78
2	5.340	106.80
2 1/2	8.345	166.90
3	12.015	240.30

*Sizes over 3/4" are M1020

THREADED CARBON STEEL ROD

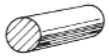


Low Carbon – Rolled Thread
Stock Lengths - 12 Ft.

Diameter in Inches	Number of Threads per Inch	Approx. Wt. per Ft. in Lbs.	Diameter in Inches	Number of Threads per Inch	Approx. Wt. per Ft. in Lbs.
1/4	20	.125	3/4	10	1.23
5/16	18	.195	7/8	9	1.70
3/8	16	.288	1	8	2.25
7/16	14	.411	1 1/8	7	2.80
1/2	13	.534	1 1/4	7	3.55
5/8	11	.845	1 1/2	6	5.10

Also available National Fine Thread
Also available as pre-galvnized.

Larger diameter threaded bars are available using our special threading machines, please inquire.



SPRING STEEL ROUNDS

Hot Rolled C1095

Size in Inches	Weight per Ft. Lbs.	Lengths in Feet	Size in Inches	Weight per Ft. Lbs.	Lengths in Feet
3/8	.376	16	1	2.670	16
7/16	.511	16	1 1/8	3.380	16
1/2	.668	16	1 1/4	4.172	16
5/8	1.043	16	1 1/2	6.008	16
3/4	1.502	16	1 3/4	8.178	16
7/8	2.044	16			

SPRING STEEL FLATS

Hot Rolled C1095
Round Edge Overall

Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet	Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet
1/8 x 3/4	.311	16	1/4 x 2 1/2	2.093	16
1	.417	16	3	2.518	16
1 1/4	.523	16	4	3.368	16
1 1/2	.630	16	3/8 v 1 1/2	1.841	16
1 3/4	.736	16	1 3/4	2.159	16
2	.842	16	2	2.478	16
2 1/2	1.063	16	2 1/2	3.116	16
3	1.275	16	3	3.753	16
3/16 x 1	.620	16	3 1/2	4.391	16
1 1/4	.779	16	4	5.028	16
1 1/2	.938	16	1/2 x 1 1/2	2.422	16
1 3/4	1.098	16	2	3.272	16
2	1.257	16	2 1/2	4.122	16
2 1/2	1.576	16	3	4.972	16
3	1.895	16	4	6.672	16
1/4 x 1	.818	16	5	8.372	16
1 1/4	1.031	16	6	10.070	16
1 1/2	1.243	16	5/8 x 3	6.175	16
1 3/4	1.456	16			
2	1.668	16			

ROUND EDGE FLATS

Packing House Beef Rail
M-1044 Merchant Quality or ASTM A36

Size in Overall Meas.	Weight per Ft. Lbs.	Est. Wt. 20' Bar
1/2 x 2 1/2	4.12	82.4

HOT ROLLED STRIP

Commercial Quality – ASTM A569
M1020 Merchant Quality or ASTM A36
Stock Lengths 20 Ft.

Thickness and Width Inches	Weight per Ft. Lbs.	Thickness and Width Inches	Weight per Ft. Lbs.
No. 16 (.065")		1/8 (.125")	
1/2	.1105	3 1/4	1.381
3/4	.1658	3 1/2	1.488
1	.2210	4	1.700
1 1/2	.3315	4 1/2	1.913
2	.4420	5	2.125
2 1/2	.5525	5 1/2	2.338
3	.6630	6	2.550
		7	2.975
No. 14 (.083")		8	3.400
1/2	.1411	12	5.10
3/4	.2117		
1	.2822	No. 10 (.1345")	
1 1/2	.4233	3/4	.342
2	.5644	1	.456
2 1/2	.7055	1 1/2	.683
3	.8466	2	.911
3 1/2	.9877	2 1/2	1.139
4	1.1288		
		3/16 (.1875")	
No. 12 (.109")		3/8	.239
1/2	.185	1/2	.319
3/4	.278	5/8	.398
1	.371	3/4	.478
1 1/2	.556	7/8	.558
2	.741	1	.638
2 1/2	.927	1 1/8	.717
3	1.112	1 1/4	.797
4	1.487	1 3/8	.877
		1 1/2	.956
1/8 (.125")		1 3/4	1.116
1/2	.213	2	1.275
5/8	.266	2 1/4	1.43
3/4	.319	2 1/2	1.59
7/8	.372	2 3/4	1.75
1	.425	3	1.91
1 1/8	.478	3 1/2	2.23
1 1/4	.531	4	2.55
1 3/8	.584	4 1/2	2.87
1 1/2	.638	5	3.19
1 3/4	.744	5 1/2	3.51
2	.850	6	3.83
2 1/4	.956	7	4.46
2 1/2	1.062	8	5.10
2 3/4	1.169	10	6.38
3	1.275	12	7.65

HOT ROLLED FLATS

M1020 Merchant Quality or ASTM A36

Stock Lengths 20 Ft.

Size in Inches	Weight per Ft. Lbs.
¼ x	
⅜	.319
½	.425
⅝	.531
¾	.638
⅞	.744
1	.850
1⅛	.956
1¼	1.06
1⅜	1.17
1½	1.28
1⅝	1.38
1¾	1.49
2	1.70
2¼	1.91
2½	2.13
2¾	2.34
3	2.55
3¼	2.76
3½	2.98
3¾	3.19
4	3.40
4¼	3.61
4½	3.83
5	4.25
5½	4.68
6	5.10
7	5.95
7½	6.38
8	6.80
9	7.66
10	8.50
5/16 x	
½	.531
⅝	.664
¾	.797
⅞	.93
5/16 x	
1	1.06
1⅛	1.20
1¼	1.33
1⅜	1.46
1½	1.59
1¾	1.86
2	2.13
2¼	2.39
2½	2.66
2¾	2.92
3	3.19
3¼	3.45
3½	3.72
4	4.25
4½	4.78
5	5.31
5½	5.84
6	6.38
7	7.44
7½	7.97
8	8.50
10	10.63
⅜ x	
½	.638
⅝	.797
¾	.956
⅞	1.12
1	1.28
1⅛	1.43
1¼	1.59
1⅜	1.75
1½	1.91
1⅝	2.07
1¾	2.23
2	2.55

(continued on following page)

HOT ROLLED FLATS

M1020 Merchant Quality or ASTM A36

Stock Lengths 20 Ft.

(continued from preceding page)

Size in Inches	Weight per Ft. Lbs.
⅜ x	
2¼	2.87
2½	3.19
2¾	3.51
3	3.83
3¼	4.14
3½	4.46
4	5.10
4½	5.74
5	6.38
5½	7.01
6	7.65
7	8.93
7½	9.56
8	10.20
9	11.48
10	12.75
12	15.30
7/16 x	
¾	1.12
1	1.49
1¼	1.86
1½	2.23
1¾	2.60
2	2.98
2¼	3.35
2½	3.72
3	4.46
3½	5.21
4	5.95
4½	6.69
5	7.44
5½	8.18
6	8.93
½ x	
⅝	1.06
¾	1.28
⅞	1.49
1	1.70
1⅛	1.91
1¼	2.13
1⅜	2.34
1½	2.55
1⅝	2.76
1¾	2.98
2	3.40
2¼	3.83
2½	4.25
2¾	4.68
3	5.10
3¼	5.53
3½	5.95
4	6.80
4½	7.65
5	8.50
5½	9.35
6	10.20
7	11.90
8	13.60
9	15.3
10	17.0
12	20.4
⅝ x	
¾	1.59
⅞	1.86
1	2.13
1⅛	2.39
1¼	2.66
1⅜	2.92
1½	3.19
1⅝	3.45

(continued on following page)

HOT ROLLED FLATS

M1020 Merchant Quality or ASTM A36
Stock Lengths 20 Ft.

Size in Inches	Weight per Ft. Lbs.
(continued from preceding page)	
⅝ x	
1¾	3.72
2	4.25
2¼	4.78
2½	5.31
2¾	5.84
3	6.38
3¼	6.91
3½	7.44
4	8.50
4½	9.56
5	10.63
5½	11.69
6	12.75
7	14.88
8	17.00
9	19.13
10	21.26
12	25.50
¾ x	
⅞	2.23
1	2.55
1⅛	2.87
1¼	3.19
1½	3.83
1⅝	4.14
1¾	4.46
2	5.10
2¼	5.74
2½	6.38
2¾	7.01
3	7.65
3¼	8.29
3½	8.93
4	10.20
4½	11.48
5	12.75
5½	14.03
¾ x	
6	15.30
7	17.85
8	20.40
9	22.95
10	25.50
12	30.60
⅞ x	
1	2.98
1¼	3.72
1⅜	4.09
1½	4.46
1¾	5.21
2	5.95
2¼	6.69
2½	7.44
2¾	8.18
3	8.93
3½	10.41
4	11.90
4½	13.39
5	14.88
5½	16.36
6	17.85
7	20.83
8	23.80
1 x	
1¼	4.25
1½	5.10
1¾	5.95
2	6.80
2¼	7.65
2½	8.50
2¾	9.35
3	10.20
3¼	11.05
3½	11.90
4	13.60
4½	15.30

(continued on following page)

HOT ROLLED FLATS

M1020 Merchant Quality or ASTM -A-36
Stock Lengths 20 Ft.

Size in Inches	Weight per Ft. Lbs.
(continued from preceding page)	
1 x	
5	17.00
5½	18.70
6	20.40
7	23.80
8	27.20
10	34.00
12	40.80
1⅛ x	
2	7.65
3	11.48
4	15.30
5	19.13
6	22.95
1¼ x	
1½	6.38
1¾	7.44
2	8.50
2¼	9.56
2½	10.63
2¾	11.69
3	12.75
3¼	13.81
3½	14.88
4	17.00
4½	19.13
5	21.25
5½	23.38
6	25.50
7	29.75
8	34.00
1½ x	
1¾	8.93
2	10.20
2¼	11.48
2½	12.75
2¾	14.03
3	15.30
3½	17.85
4	20.40
4½	22.95
5	25.50
5½	28.05
6	30.60
7	35.70
*8	40.80
1¾ x	
2	11.90
2½	14.88
2¾	16.36
3	17.85
3½	20.83
4	23.80
4½	26.78
5	29.75
5½	32.73
6	35.70
2 x	
2¼	15.30
2½	17.00
3	20.40
3½	23.80
4	27.20
4½	30.60
5	34.00
*6	40.80
*7	47.80
*8	54.40
2¼ x	
3	22.95
4	30.60
2½ x	
3	25.50
3½	29.75
4	34.00
4½	38.25
*5	42.50
*6	51.00
3 x	
*3½	35.70
*4	40.80
*4½	45.90
*5	51.00
*6	61.20
3½ x	
*4	47.60
4 x	
*6	81.60

*Special Quality – C1018

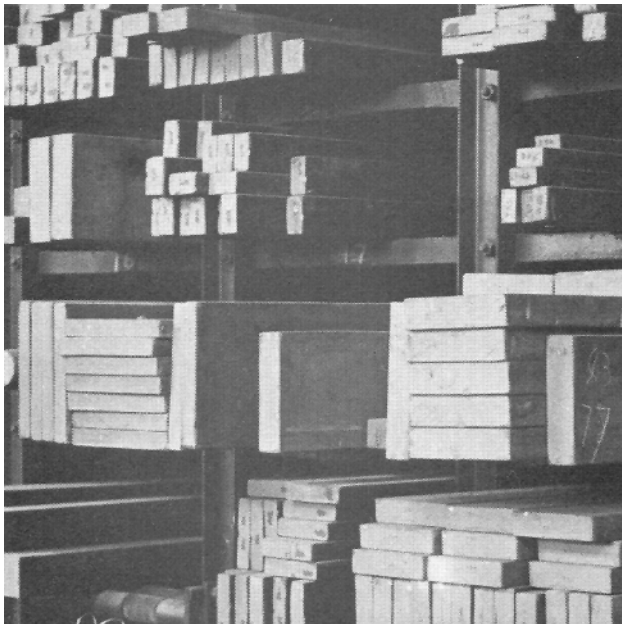
.40-.50 CARBON FLATS

M1044 Hot Rolled – Merchant Quality
Stock Lengths 20 Ft.

Size in Inches	Weight per Ft. Lbs.
¼ x	
1	0.85
1¼	1.06
1½	1.28
1¾	1.48
2	1.70
2¼	1.91
2½	2.13
3	2.55
4	3.40
5	4.25
6	5.10
5/16 x	
1½	1.59
⅜ x	
1	1.28
1¼	1.59
1½	1.91
2	2.55
2¼	2.87
2½	3.19
3	3.83
3½	4.46
4	5.10
4½	5.73
5	6.38
6	7.65
½ x	
1	1.70
1¼	2.13
1½	2.55
2	3.40
2¼	3.82
2½	4.25
3	5.10
3½	5.95
4	6.80
5	8.50
6	10.20
⅝ x	
1½	3.19
1¾	3.72
2	4.25
2½	5.31
3	6.38
4	8.50
5	10.63
6	12.75

Size in Inches	Weight per Ft. Lbs.
¾ x	
1	2.55
1½	3.83
2	5.10
2½	6.38
3	7.65
4	10.20
5	12.75
6	15.30
⅞ x	
2	5.95
3	8.93
4	11.90
1 x	
1½	5.10
2	6.80
2½	8.50
3	10.20
4	13.60
5	17.00
6	20.40
1¼ x	
2	8.50
2½	10.63
3	12.75
4	17.00
5	21.25
6	25.50
1½ x	
2	10.20
2½	12.75
3	15.30
4	20.40
5	25.50
6	30.60
1¾ x	
2	11.90
2½	14.88
2 x	
2½	17.00
3	20.40
4	27.20
5	34.00
*6	40.80
3 x	
*5	51.00

*Special Quality – C1045



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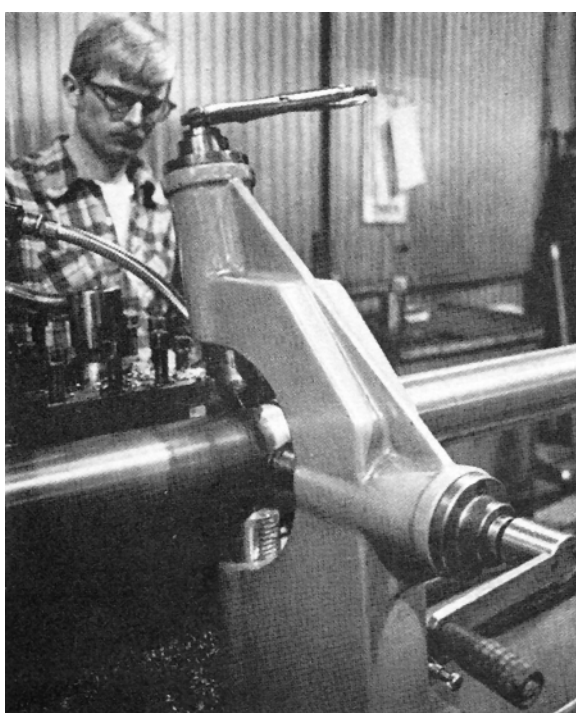
MILLING	TAPPING
PLANING	THREADING



Precision machining of cold finished bars to exacting tolerances

COLD FINISHED BARS

Cold Finished Bars are produced from Hot Rolled Special Bar Quality material.This material is then cold drawn, turned, or ground to produce the Cold Finished Bar. Because the cross sectional area of the Hot Rolled Bar is cold reduced, the Cold Finished Bar has closer tolerances, smoother surface, improved machinability, and increased mechanical properties over the Hot Rolled Bar Product.

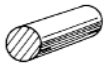
LOW CARBON – CASE HARDENING:
1018 – A general purpose low carbon steel with good case hardening properties; manufactured for cold forming and bending, as well as welding and brazing. Specifications: AISI-C-1018, ASTM-A-108.
10L18 – Addition of lead improves machinability with no effect on case hardening properties. Specifications: AISI-C-10L18, ASTM-A-108.
1117 – A low carbon, high manganese steel with superior case hardening properties, while retaining a ductile core. Specifications: AISI-C-1117, ASTM-A-108.
11L17 – Addition of lead improves machinability with no effect on case hardening properties. Specifications: AISI-C-11L17, ASTM-A-108.

MEDIUM CARBON – DIRECT HARDENING:
1045 – Higher carbon level increases strength levels and heat treatability. Specifications: AISI-C-1045, ASTM-A-108.
1141 – A medium carbon, high manganese steel with increased machinability and heat treatability. Specifications: AISI-C-1141, ASTM-A-108.
11L41 – Addition of lead improves machinability with no effect on heat treatability. Specifications: AISI-C-11L41, ASTM-A-108.
1144 – Slightly higher carbon and sulphur levels improve machinability but restrict weldability. specifications: AISI-C-1144, ASTM-A-108.

11L44 – Addition of lead improves machinablility with no effect on mechanical properties. Specifications: AISI-C-11L44, ASTM-A-108.

HIGH STENGTH:
Stressproof® – A medium carbon, high manganese steel; high strength levels attained by severe cold reduction; good machinability with minimum distortion, Specifications: proprietary product of LaSalle Steel Company, ASTM-A-108.
Fatigueproof® – A high manganese, resulphurized steel; “Elevated Temperature Drawn” process produces higher strength levels, yet maintains machinability with minimum distortion. Specifications: proprietary product of LaSalle Steel Company, ASTM-A-108.

SCREW MACHINE STOCK:
1215 – The standard screw machine stock with improved machinability; limited weldability and case hardenability. Specificaitons: AISI-C-1215, ASTM-A-108.
12L14 – Addition of lead improves machinability to higher levels; inherent ductility provides bending, crimping, and riveting properties. Specifications: ASTM-A-108.
12L14 with Tellurium **–** Addition of tellerium improves machinability to fastest machining steel available. Same mechanical and forming properties as 12L14.



COLD DRAWN ROUNDS

1018 1045 1117 11L17 1141 1144

Sizes through 6” are Cold Drawn; Sizes over 6” are Turned & Polished
(1018: 4” and under Cold Drawn; 4” through 6” Cold
Drawn or Turned and Polished)

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet				
		1018	1045	1117 11L17	1141	1144
1/8	.042	12		12	12	12
5/32	.065	12	...	12	12	12
3/16	.094	12	12	12	12	12
7/32	.128	12	...	12	12	...
1/4	.167	12*	12	12	12**	12
5/16	.261	12*	12	12	12**	12
3/8	.376	12*	12	12	12**	12
7/16	.511	12*	12	12	12**	12
1/2	.668	12,20*	12	12	12**	12
9/16	.845	12,20*	12	12	12**	12
5/8	1.043	12,20*	12	12	12**	12
11/16	1.262	12,20*	12	12	12**	12
3/4	1.502	12,20*	12	12	12**	12
13/16	1.763	12,20	12	12	12**	12
7/8	2.045	12,20*	12	12	12**	12
15/16	2.347	12,20	12	12	12	12
1	2.670	12,20*	12,20	12	12**	12
1 1/16	3.015	12,20	12,20	12	12	12
1 1/8	3.380	12,20*	12,20	12	12**	12
1 3/16	3.766	12,20	12,20	12	12	12
1 1/4	4.173	12,20	12,20	12	12**	12
1 5/16	4.600	12,20	12,20	12	12**	12
1 3/8	5.049	12,20*	12,20	12	12	12
1 7/16	5.518	12,20	12,20	12	12	12
1 1/2	6.008	12,20*	12,20	12	12**	12
1 9/16	6.520	12,20	12,20	12	12	...
1 5/8	7.052	12,20*	12,20	12	12	12
1 11/16	7.604	12,20	12,20	12	12	12
1 3/4	8.178	12,20*	12,20	12	12**	12
1 13/16	8.773	12,20	12,20	12	12	12
1 7/8z	9.388	12,20	12,20	12	12	12
1 15/16	10.024	12,20	12,20	12	12**	...
2	10.68	12,20*	12,20	12	12	12
2 1/16	11.36	12,20	12,20	12	12	...
2 1/8	12.06	12,20	12,20	12	12	12
2 3/16	12.78	12,20	12,20	12	12	...
2 1/4	13.52	12,20*	12,20	12	12*	12
2 5/16	14.28	12,20	12,20	12	12	...
2 3/8	15.06	12,20*	12,20	12	12	12
2 7/16	15.87	12,20	12,20	12	12	...
2 1/2	16.69	12,20	12,20	12	12**	12
2 9/16	17.53	12,20	.....	12	...	...
2 5/8	18.40	12,20	12,20	12	12	...
2 11/16	19.29	12,20	12,20	12	12	...

* Also available as 10L18.
** Also available as 11L41.

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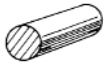
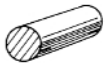


COLD DRAWN ROUNDS

1018 1045 1117 11L17 1141 1144

Sizes through 6” are Cold Drawn; Sizes over 6” are Turned & Polished
(1018: 4” and under Cold Drawn; 4” through 6” Cold
Drawn or Turned and Polished)

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet				
		1018	1045	1117 11L17	1141	1144
(continued from preceding page)						
2 3/4	20.19	12,20	12,20	12	12	12
2 13/16	21.12	12,20	12,20	12	12	...
2 7/8	22.07	12,20	12,20	12	12	12
2 15/16	23.04	12,20	12,20	12	12	...
3	24.03	12,20	10,20	12	12	12
3 1/16	25.05	20	...	...	...	...
3 1/8	26.08	12,20	10,20	12	12	...
3 3/16	27.13	20	20	12	...	...
3 1/4	28.21	12,20	10, 20	12	12**	12
3 5/16	29.30	20	...	...	...	...
3 3/8	30.42	12,20	10, 20	12	12	...
3 7/16	31.55	12,20	20	12	...	...
3 1/2	32.71	12,20	20	12	12	12
3 9/16	33.89	20	...	...	...	...
3 5/8	35.09	12,20	20	12	12	...
3 11/16	36.31	20	20	...	...	...
3 3/4	37.55	12,20	10,20	12	12	...
3 13/16	38.81	20	...	...	...	...
3 7/8	40.10	12,20	10,20	12	...	...
3 15/16	41.40	12,20	10,20	...	...	...
4	42.73	12,20	10,20	12	12	12
4 1/8	45.44	20	10,20	12	12	12
4 1/4	48.23	12,20	10,20	12	12	12
4 3/8	51.11	20	20	12	12	...
4 7/16	52.58	20	10,20	...	...	...
4 1/2	54.08	12,20	10,20	12	12	...
4 9/16	55.59	20	...	...	...	...
4 5/3	57.12	10,20	10,20	12	...	...
4 3/4	60.25	12,20	10,20	12	12	...
4 7/8	63.46	20	10,20	12	...	...
4 15/16	65.10	12,20	10,20	...	...	...
5	66.76	12,20	10,20	12	12	...
5 1/8	70.14	20	...	...	...	...
5 1/4	73.60	10,20	20	12	...	...
5 3/8	77.15	20	...	...	...	...
5 7/16	78.95	20	20	...	...	...
5 1/2	80.78	12,20	10,20	12	12	...
5 5/8	84.49	20	...	...	...	...
5 3/4	88.29	12,20	10,20	12	...	...
5 7/8	92.17	20	...	...	...	...
5 15/16	94.14	20	20	...	...	...
6	96.13	12,20	10.20	12	...	...
6 1/8	100.18	20	...	...	...	...
6 1/4	104.31	12,20	20	...	...	...
6 1/2	112.82	12,20	20	...	...	...
6 3/4	121.67	20	...	...	...	...
7	130.85	20	20	...	...	...
7 1/2	150.21	20	20	...	...	...
8	170.90	20	20	...	...	...
8 1/2	192.93	12,20	20	...	...	...
9	216.30	12,20	20	...	...	...
10	267.00	12,20	20	...	...	...



COLD DRAWN ROUNDS
1215 12L14 12L14 with Tellurium

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet: Est. Wt. 12' Bar	1215	12L14	12L14 with Tellurium
1/16	.010	.120	12	12	....
5/64	.016	.192	12	....	....
3/32	.024	.288	12	12	....
7/64	.032	.384	12	12	....
1/8	.042	.504	12	12	12
9/64	.053	.636	12	12	....
5/32	.065	.780	12	12	....
11/64	.079	.948	12	12	....
3/16	.094	1.128	12	12	12
13/64	.110	1.32	12	12	....
7/32	.128	1.54	12	12	12
15/64	.147	1.76	12	12	12
1/4	.167	2.00	12	12	12
17/64	.188	2.26	12	12	....
9/32	.211	2.53	12	12	12
19/64	.235	2.82	12	12	....
5/16	.261	3.13	12	12	12
21/64	.288	3.46	12	12	....
11/32	.316	3.79	12	12	12
23/64	.345	4.14	12	12	....
3/8	.376	4.51	12	12	12
25/64	.408	4.90	12	12	....
13/32	.441	5.29	12	12	12
27/64	.475	5.70	12	12	....
7/16	.511	6.13	12	12	12
29/64	.548	6.58	12	12	....
15/32	.587	7.04	12	12	12
31/64	.627	7.52	12	12	....
1/2	.668	8.02	12	12	12
33/64	.710	8.52	12	12	....
17/32	.754	9.05	12	12	12
35/64	.799	9.59	12	12	....
9/16	.845	10.14	12	12	12
37/64	.893	10.72	12	12	....
19/32	.941	11.29	12	12	12
39/64	.992	11.90	12	12	....
5/8	1.043	12.52	12	12	12
41/64	1.096	13.15	12	12	....

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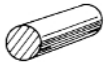


COLD DRAWN ROUNDS
1215 12L14 12L14 with Tellurium

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet: Est. Wt. 12' Bar	1215	12L14	12L14 with Tellurimum
21/32	1.150	13.80	12	12	....
43/64	1.206	14.47	12	12	....
11/16	1.262	15.14	12	12	12
45/64	1.320	15.84	12	12	....
23/32	1.380	16.56	12	12	12
47/64	1.440	17.28	12	12	....
3/4	1.502	18.02	12	12	12
49/64	1.565	18.78	12	12	....
25/32	1.630	19.56	12	12	12
51/64	1.696	20.35	12	....	....
13/16	1.763	21.16	12	12	12
27/32	1.901	22.81	12	12	12
7/8	2.045	24.54	12	12	12
57/64	2.118	25.42	12	12	....
29/32	2.193	26.32	12	12	....
15/16	2.347	28.16	12	12	12
31/32	2.506	30.07	12	12	....
63/64	2.588	31.06	12	....	....
1	2.670	32.04	12	12	12
1 1/64	2.754	33.05	12	12	....
1 1/32	2.840	34.08	12	....	....
1 1/16	3.015	36.18	12	12	12
1 1/8	3.380	40.56	12	12	12
1 3/16	3.766	45.19	12	12	12
1 1/4	4.173	50.08	12	12	12
1 5/16	4.600	55.20	12	12	12
1 3/8	5.049	60.59	12	12	12
1 7/16	5.518	66.22	12	12	12
1 1/2	6.008	72.10	12	12	12
1 9/16	6.520	78.24	12	12	12
1 5/8	7.052	84.62	12	12	12
1 11/16	7.604	91.25	12	12	12
1 3/4	8.178	98.14	12	12	12
1 13/16	8.773	105.28	12	12	12
1 7/8	9.388	112.66	12	12	12
1 15/16	10.024	120.29	12	12	12
2	10.68	128.16	12	12	12
2 1/16	11.36	136.32	12	12	12

(continued on following page)

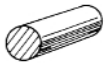
COLD DRAWN ROUNDS
1215 12L14 12L14 with Tellurium

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet: Est. Wt. 12' Bar	1215	12L14	12L14 with Tellurimum
2⅛	12.06	144.72	12	12	12
2 3/16	12.78	153.36	12	....	12
2¼	13.52	162.24	12	12	12
2 5/16	14.28	171.36	12	12	12
2⅜	15.06	180.72	12	12	12
2 7/16	15.87	190.44	12	12	....
2½	16.69	200.28	12	12	12
2 9/16	17.53	210.36	12	12	....
2⅝	18.40	220.80	12	12	....
2 11/16	19.29	231.48	12	12	....
2¾	20.19	242.28	12	12	....
2 13/16	21.12	253.44	12	12	....
2⅞	22.07	264.84	12	12	....
2 15/16	23.04	276.48	12	12	....
3	24.03	288.36	12	12	....
3 1/16	25.05	300.60	....	12	....
3⅛	26.08	312.96	12	12	....
3¼	28.21	338.52	12	12	....
3 5/16	29.30	351.60	....	12	....
3⅜	30.42	365.04	12	12	....
3 7/16	31.55	378.60	12	....	....
3½	32.71	392.52	12	12	....
3⅞	40.10	481.20	12	12	....
4	42.73	512.76	12	12	....
4 1/16	44.07	528.84	....	12	....
4⅛	45.44	545.28	12	12	....
4¼	48.23	578.76	12	12	....
4⅜	51.11	613.32	12	....	....
4½	54.08	648.96	12	12	....
4 9/16	55.59	667.08	....	12	....
4⅝	57.12	685.44	12	....	....
4¾	60.25	723.00	12	12	....
4⅞	63.46	761.52	12	....	....
5	66.76	801.12	12	12	....
5¼	73.60	883.20	12	....	....
5⅜	77.15	925.80	12	....	....
5½	80.78	969.36	12	....	....
5⅝	84.49	1013.88	12	....	....
5¾	88.29	1059.48	12	....	....
5⅞	92.17	1106.04	12	....	....
6	96.13	1153.56	12	....	....

COLD DRAWN ROUNDS
STRESSPROOF®
FATIGUE PROOF®

Size in Inches	Weight per Ft. Lbs.	Random Lengths, Feet: Est. Wt. 12' Bar	Stress-proof	Fatigue-proof
¼	.167	2.00	12	12
5/16	.261	3.13	12	12
⅜	.376	4.51	12	12
7/16	.511	6.13	12	12
½	.668	8.02	12	12
9/16	.845	10.14	12	12
⅝	1.043	12.52	12	12
11/16	1.262	15.14	12	12
¾	1.502	18.02	12	12
13/16	1.763	21.16	12	12
⅞	2.045	24.54	12	12
15/16	2.347	28.16	12	12
1	2.670	32.04	12	12
1 1/16	3.015	36.18	12	12
1⅛	3.380	40.56	12	12
1 3/16	3.766	45.19	12	12
1¼	4.173	50.08	12	12
1 5/16	4.600	55.20	12	12
1⅜	5.049	60.59	12	12
1 7/16	5.518	66.22	12	12
1½	6.008	72.10	12	12
1 9/16	6.520	78.24	12	12
1⅝	7.052	84.62	12	12
1 11/16	7.604	91.25	12	12
1¾	8.178	98.14	12	12
1 13/16	8.773	105.28	12	12
1⅞	9.388	112.66	12	12
1 15/16	10.024	120.29	12	12
2	10.68	128.18	12	12
2 1/16	11.36	136.32	12	12
2⅛	12.06	144.72	12	12
2 3/16	12.78	153.36	12	12
2¼	13.52	162.24	12	12
2 5/16	14.28	171.36	12	12
2⅜	15.06	180.72	12	12
2 7/16	15.87	190.44	12	....
2½	16.69	200.28	12	12
2 9/16	17.53	210.36	12	....
2⅝	18.40	220.80	12	....
2 11/16	19.29	231.48	12	....
2¾	20.19	242.28	12	12
2⅞	22.07	264.84	12	....
2 15/16	23.04	276.48	12	....
3	24.03	288.36	12	12
3⅛	26.08	312.96	12	....
3¼	28.21	338.52	12	12
3⅜	30.42	365.04	12	....
3½	32.71	392.52	12	12
3⅝	35.09	421.08	12	....
3¾	37.55	450.60	12	....
3⅞	40.10	481.20	12	....
4	42.73	512.71	12	....
4⅛	45.44	545.28	12	....
4¼	48.23	578.76	12	....
4⅜	51.11	613.32	12	....
4½	54.08	648.99	12	....

TURNED, GROUND AND POLISHED SHAFTING



1018 1045 1141

STOCK LENGTHS: 12, 16, 20, 24 FEET

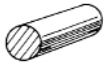
TOLERANCES

Sizes in Inches	1018, 1045	1141
5/8" to 1" Incl.	–.001 to +.000	
1 1/8" to 1 1/2" Incl.	–.0005 to –.0015	–.0005 to –.0015
1 9/16" to 2 7/16" Incl.	–.005 to –.002	–.0005 to –.002
2 1/2" to 3" Incl.	–.005 to –.0025	–.0005 to –.0025
3 1/16" to 4" Incl.	–.0005 to –.0035	–.0005 to –.0035
4 1/16" to 6" Incl.	–.0005 to –.0055	–.0005 to –.0045
6 1/16" to 8" Incl.	–.0005 to –.0065	

Size in Inches	Weight per Ft. Lbs.	1018	1045	1141	Size in Inches	Weight per Ft. Lbs.	1018	1045	1141
* 5/8	1.045	...	X	...	2 15/16	23.04	X	X	X
* 3/4	1.502	X	X	...	3	24.03	X	X	X
*1	2.670	X	X	...	3 1/8	26.08	...	X	...
1 1/8	3.380	X	X	X	3 5/16	27.13	...	X	...
1 3/16	3.766	X	X	X	3 1/4	28.21	X	X	X
1 1/4	4.173	X	X	X	3 3/8	30.42	...	X	X
1 5/16	4.600	X	X	X	3 7/16	31.55	X	X	X
1 3/8	5.049	X	X	X	3 1/2	32.71	X	X	X
1 7/16	5.518	X	X	X	3 5/8	35.09	...	X	...
1 1/2	6.008	X	X	X	3 11/16	36.31	X	X	...
1 9/16	6.250	X	X	X	3 3/4	37.55	X	X	X
1 5/8	7.052	X	X	X	3 15/16	41.40	X	X	X
1 11/16	7.604	X	X	X	4	42.73	X	X	X
1 3/4	8.178	X	X	X	4 1/16	45.44	...	X	...
1 13/16	8.773	X	...	...	4 1/8	48.23	X	X	X
1 7/8z	9.388	X	X	X	4 1/4	49.66	...	X	...
1 15/16	10.024	X	X	X	4 3/8	51.11	...	X	...
2	10.68	X.	X	X	4 1/2	52.58	X	X	...
2 1/16	11.36	...	X	...	4 9/16	54.08	X	X	X
2 1/8	12.06	X	X	X	4 5/8	57.12	...	X	...
2 3/16	12.78	X	X	X	4 3/4	60.25	X	X	...
2 1/4	13.52	X	X	X	4 7/8	65.10	X	X	X
2 5/16	14.28	...	X	...	5	66.76	X	X	X
2 3/8	15.06	X	X	X	5 1/4	73.60	...	X	...
2 7/16	15.87	X	X	X	5 3/8	78.95	...	X	...
2 1/2	16.69	X	X	X	5 1/2	80.78	X	X	...
2 9/16	17.53	...	X	...	5 5/8	84.49	...	X	...
2 5/8	18.40	X	X	...	5 3/4	88.29	X	X	...
2 11/16	19.29	X	X	X	5 7/8	94.14	...	X	...
2 3/4	20.19	X	X	X	6	96.13	X	X	X
2 13/16	21.12	X	X	...	7	130.85	...	X	...
2 7/8	22.07	...	X	...	8	170.90	...	X	...

*These sizes are Cold Drawn, Ground & Polished and carried in 12 or 20 frt. lengths.

GROUND AND POLISHED



1215 1141 Special Accuracy Stock
Tolerance ±.0005

Stressproof® - Fatigueproof®

Tolerances: 1 1/2" and Under +.000 to – .001
1 9/16" to 2 7/16" Incl. =.000 to – .0015
2 1/2" to 3" Incl. +.000 to –.002
3 1/16" to 4" Incl. + .000 to –.003
4 1/16" to 4 1/2" Incl. +.000 to –.005

Size in Inches	Weight per Ft. Lbs.	Stock Lengths in Feet: 1215	1141	Stress-proof	Fatigue-proof
3/32	.023	12	....	....	....
1/8	.042	12	....	....	....
5/32	.065	12	....	....	....
3/16	.094	12	....	....	....
7/32	.128	12	....	....	....
1/4	.167	12	12	....	....
9/32	.211	12	12	....	....
5/16	.261	12	12	....	....
11/32	.316	12	....	....	....
3/8	.376	12	12	12	....
7/16	.511	12	12	12	....
1/2	.668	12	12	12	12
9/16	.845	12	....	12	12
5/8	1.043	12	12	12	12
11/16	1.262	12	....	...	....
3/4	1.502	12	12	12	12
13/16	1.763	12	....	12	12
7/8	2.045	12	12	12	....
15/16	2.347	12	....	12	....
1	2.670	12	12	12,20	....
1 1/16	3.015	12	12	....	....
1 1/8	3.380	12	12	12,20	....
1 3/16	3.766	12	....	20	....
1 1/4	4.173	12	12	12,20	12,20
1 5/16	4.600	....	....	20	....
1 3/8	5.049	12	12	12,20	12,20
1 7/16	5.518	12	....	20	....
1 1/2	6.008	12	12	12,20	20
1 5/8	7.052	....	....	12,20	....
1 11/16	7.604	....	....	20	....
1 3/4	8.178	....	....	12,20	20
1 7/8z	9.388	....	....	20	....
1 15/16	10.024	....	....	20	....
2	10.68	....	....	12,20	20
2 1/8	12.06	....	....	20	....
2 3/16	12.78	....	....	20	....
2 1/4	13.52	....	....	20	....
2 3/8	15.06	....	....	20	....
2 1/2	16.69	....	....	20	....
2 3/4	20.19	....	....	20	....
3	24.03	....	....	20	....
3 1/2	32.71	....	....	20	....
4	42.73	....	....	20	....

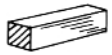
COLD DRAWN HEXAGONS

1018 1117 1045 12L14 Stressproof®

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Random Lengths, Feet					
			1018	1117	1045	1215	12L14	Stress-Proof
¼	.184	2.21	12	12	....	12	12	12
5/16	.288	3.46	12	12	....	12	12	12
⅜	.414	4.97	12	12	....	12	12	12
7/16	.564	6.77	12	12	....	12	12	12
½	.796	8.83	12	12	12	12	12	12
9/16	.932	11.18	12	12	12	12	12	12
⅝	1.15	13.80	12	12	12	12	12	12
11/16	1.39	16.68	12	12	....	12	12	12
¾	1.66	19.92	12	12	12	12	12	12
13/16	1.94	23.28	12	12	.....	12	12	12
⅞	2.25	27.00	12	12	12	12	12	12
15/16	2.59	31.08	12	12	12	12	12	12
1	2.94	35.28	12	12	12	12	12	12
1 1/16	3.32	39.84	12	12	....	12	12	12
1⅛	3.73	44.76	12	12	12	12	12	12
1 3/16	4.15	49.80	12	12	....	12	....	....
1¼	4.60	55.20	12	12	12	12	12	12
1 5/16	5.07	60.84	12	12	12	12	12	12
1⅜	5.57	66.84	12	12	12	12	12	12
1 7/16	6.09	73.08	12	12	....	12	12	....
1½	6.63	79.56	12	12	12	12	12	12
1 9/16	7.19	86.28	12	....	....	12	....	....
1⅝	7.78	93.36	12	12	12	12	12	12
1 11/16	8.39	100.68	12	....	....	12	12	12
1¾	9.02	108.24	12	12	12	12	12	12
1 13/16	9.67	116.04	....	12	....	12	12	....
1⅞	10.35	124.22	12	12	12	12	12	12
2	11.78	141.36	12	12	12	12	12	12
2 1/16	12.53	150.36	....	12	....	12	12	....
2⅛	13.30	159.60	12	12	....	12	12	....
2¼	14.91	178.92	12	12	12	12	12	....
2⅜	16.61	199.32	12	12	....	12	12	....
2½	18.40	220.80	12	12	12	12	12	....
2⅝	20.29	243.48	12	12	....	12	12	....
2¾	22.27	267.24	12	12	12	12	12	....
3	26.50	318.00	12	12	....	12	12	....
3⅛	28.75	345.00	....	12	....	....	....	....
3¼	31.10	373.20	12	....	....	....	....	....
3½	36.07	432.84	12	....	....	....	12	....
3¾	41.40	496.80	12	....	....	....	....	....
4	47.11	565.32	12	....	....	....	....	....

SQUARES – COLD DRAWN STEEL

1018 1117 1215 12L14 1045



Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Random Lengths, Feet				
			1018	1117	1215	12L14	1045
⅛	.053	.64	12	....	12	....	....
5/32	.083	1.00	....	....	12	....	....
3/16	.120	1.44	12	....	12	12	....
7/32	.163	1.96	....	....	12	....	....
¼	.213	2.56	12	....	12	12	12
9/32	.269	3.23	....	....	12	12	....
5/16	.332	3.98	12	....	12	12	12
⅜	.478	5.74	12	....	12	12	12
7/16	.651	7.81	12	....	12	12	....
½	.850	10.20	12	....	12	12	12
9/16	1.076	12.91	12	....	12	12	....
⅝	1.329	15.95	12	....	12	12	12
11/16	1.608	19.30	12	....	12	12	...
¾	1.914	22.97	12	....	12	12	12
13/16	2.246	26.95	12	....	12	12	....
⅞	2.605	31.26	12	....	12	12	12
15/16	2.990	35.88	12	....	12	12	12
1	3.402	40.82	12	....	12	12	12
1 1/16	3.841	46.09	12	....	12	12	12
1⅛	4.306	51.67	12	....	12	12	12
1 3/16	4.798	57.58	12	....	....	....	....
1¼	5.316	63.79	12	....	12	12	12
1 5/16	5.861	70.33	12	....	....	....	....
1⅜	6.432	77.18	12	....	12	12	....
1 7/16	7.030	84.36	12	....	....	....	....
1½	7.655	91.86	12	....	12	12	12
1 9/16	8.306	99.67	12	....	....	....	....
1⅝	8.984	107.81	12	....	12	12	....
1¾	10.419	125.03	12	12	12	12	12
1⅞	11.95	143.30	12	....	...	....	....
2	13.60	163.20	12	12	12	12	12
2⅛	15.35	184.20	12	....	...	....	....
2¼	17.21	206.52	12	12	....	12	12
2⅜	19.18	230.16	12	....	....	....	....
2½	21.25	255.00	12	12	....	....	12
2⅝	23.43	281.16	12	....	....	....	....
2¾	25.71	308.52	12	12	....	....	...,
2⅞	28.10	337.20	12	....	....	....	....
3	30.60	367.20	12,24	12	....	....	12
3¼	35.91	430.92	12	....	....	....	....
3½	41.65	499.80	12,24	12	....	....	....
3¾	47.81	573.72	12	12	....	....	....
4	54.40	652.80	12,24	12	....	....	....
4½	68.85	826.20	12	12	....	....	....
5	85.00	1020.00	12	12	....	....	....
5½	102.85	1234.20	12	12	....	....	....
6	122.40	1468.80	12	....	....	....	....

COLD DRAWN FLATS
1018

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Random Lengths Feet
1/8 x			
¼	.106	1.27	12
⅜	.159	1.91	12
½	.213	2.56	12
⅝	.266	3.19	12
¾	.319	3.83	12
⅞	.372	4.46	12
1	.425	5.10	12
1⅛	.478	5.74	12
1¼	.531	6.37	12
1½	.638	7.66	12
1¾	.744	8.93	12
2	.850	10.20	12
2½	1.06	12.76	12
3	1.28	15.30	12
3½	1.49	17.86	12
4	1.70	20.40	12
5	2.13	25.50	12
6	2.55	30.60	12
3/16 x			
¼	.159	1.91	12
⅜	.239	2.87	12
½	.319	3.83	12
⅝	.398	4.78	12
¾	.478	5.74	12
⅞	.558	6.70	12
1	.638	7.66	12
1⅛	.717	8.60	12
1¼	.797	9.56	12
1½	.956	11.47	12
1¾	1.12	13.39	12
1⅞	1.20	14.34	12
2	1.28	15.30	12
2¼	1.43	17.21	12
2½	1.59	19.13	12
2¾	1.75	21.04	12
3	1.91	22.96	12
3½	2.23	26.77	12
4	2.55	30.60	12
4½	2.87	34.42	12
5	3.19	38.26	12
6	3.83	45.90	12
8	5.10	61.20	12
10	6.38	76.50	12
1/4 x			
5/16	.266	3.19	12
⅜	.319	3.83	12
7/16	.372	4.46	12
½	.425	5.10	12
⅝	.531	6.37	12
¾	.638	7.66	12
⅞	.744	8.93	12
1	.850	10.20	12
1⅛	.956	11.47	12
1¼	1.063	12.76	12
1⅜	1.169	14.03	12
1½	1.275	15.30	12
1⅝	1.381	16.57	12
1¾	1.488	17.86	12
2	1.700	20.40	12

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Random Lengths Feet
1/4 x			
2¼	1.913	22.96	12
2½	2.125	25.50	12
3	2.550	30.60	12
3¼	2.763	33.16	12
3½	2.975	35.70	12
3¾	3.188	38.26	12
4	3.400	40.80	12
4½	3.825	45.90	12
5	4.250	51.00	12
5½	4.675	56.10	12
6	5.100	61.20	12
7	5.950	71.40	12
8	6.800	81.60	12
9	7.650	91.80	12
10	8.500	102.00	12
11	9.350	112.20	12
12	10.200	122.40	12
14⅝	12.430	149.16	12
5/16 x			
⅜	.398	4.78	12
½	.531	6.37	12
⅝	.664	7.97	12
¾	.797	9.56	12
⅞	.930	11.16	12
1	1.063	12.76	12
1¼	1.328	15.94	12
1½	1.594	19.13	12
2	2.125	25.50	12
2¼	2.391	28.69	12
2½	2.656	31.87	12
2¾	2.922	35.06	12
3	3.188	38.26	12
3½	3.719	44.63	12
4	4.250	51.00	12
4½	4.781	57.37	12
5	5.313	63.76	12
6	6.375	76.50	12
7	7.438	89.26	12
8	8.500	102.00	12
10	10.625	127.50	12
12	12.75	153.00	12
3/8 x			
½	.638	7.66	12
⅝	.797	9.56	12
¾	.956	11.47	12
⅞	1.116	13.39	12
1	1.275	15.30	12
1⅛	1.434	17.21	12
1¼	1.594	19.13	12
1⅜	1.753	21.04	12
1½	1.913	22.96	12
1⅝	2.072	24.86	12
1¾	2.231	26.77	12
2	2.550	30.60	12
2¼	2.869	34.43	12
2½	3.188	38.26	12
2¾	3.506	42.07	12
3	3.825	45.90	12
3¼	4.144	49.73	12

Continued on following page

COLD DRAWN FLATS
1018

Continued from preceding page

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Randon Lengths Feet
3/8 x			
3½	4.463	53.56	12
3¾	4.781	57.37	12
4	5.100	61.20	12
4½	5.738	68.86	12
5	6.375	76.50	12
5½	7.013	84.16	12
6	7.650	91.80	12
7	8.925	107.10	12
8	10.200	122.40	12
9	11.480	137.76	12
10	12.750	153.00	12
12	15.300	183.60	12
14⅝	18.650	223.80	12
7/16 x			12
½	.744	8.93	12
⅝	.930	11.16	12
¾	1.116	13.39	12
1	1.488	17.86	12
1½	2.231	26.77	
2	2.975	35.70	12
2½	3.719	44.63	12
3	4.463	53.56	12
4	5.950	71.40	12
5	7.438	89.26	12
6	8.925	107.10	12
1/2 x			12
⅝	1.063	12.76	12
¾	1.275	15.30	12
⅞	1.486	17.86	12
1	1.70	20.40	12
1⅛	1.91	22.96	12
1¼	2.13	25.50	12
1⅜	2.34	28.06	12
1½	2.55	30.60	12
1¾	2.98	35.70	12
2	3.40	40.80	12
2¼	3.83	45.90	12
2½	4.25	51.00	12
2¾	4.68	56.10	12
3	5.10	61.20	12
3¼	5.53	66.30	12
3½	5.95	71.40	12
4	6.80	81.60	12
4½	7.65	97.80	12
5	8.50	102.00	12
5½	9.35	112.20	12
6	10.20	122.40	12
7	11.90	142.80	12
8	13.60	163.20	12
9	15.30	183.60	12
10	17.00	204.00	12
11	18.70	224.40	12
12	20.40	244.80	12
14⅝	24.86	298.32	12
9/16 x			
¾	1.43	17.21	12
1	1.91	22.96	12
1½	2.87	34.43	12
2	3.83	45.90	12
2½	4.78	57.37	12

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Random Lengths Feet
5/8 x			
¾	1.59	19.13	12
⅞	1.86	22.31	12
1	2.13	25.50	12
1¼	2.66	31.87	12
1½	3.19	38.20	12
1¾	3.72	44.63	12
2	4.25	51.00	12
2¼	4.78	57.37	12
2½	5.31	63.76	12
2¾	5.84	70.13	12
3	6.38	76.50	12
3½	7.44	89.26	12
4	8.50	102.00	12
4½	9.56	114.76	12
5	10.63	127.50	12
6	12.75	153.00	12
7	14.88	178.50	12
8	17.00	204.00	12
9	19.13	229.56	12
10	21.25	255.00	12
12	25.50	306.00	12
14⅝	31.08	372.96	12
3/4x			
⅞	2.23	26.77	12
1	2.55	30.60	12
1¼	3.19	38.26	12
1⅜	3.51	42.07	12
1½	3.83	45.90	12
1¾	4.46	53.56	12
2	5.10	61.20	12
2¼	5.74	68.86	12
2½	6.38	76.50	12
2¾	7.01	84.16	12
3	7.65	91.80	12
3¼	8.29	99.46	12
3½	8.93	107.10	12
4	10.20	122.40	12
4½	11.48	137.70	12
5	12.75	153.00	12
5½	14.03	168.30	12
6	15.30	183.60	12
7	17.85	214.20	12
8	20.40	244.80	12
9	22.95	275.40	12
10	25.50	306.00	12
11	28.05	336.60	12
12	30.60	367.20	12
14⅝	37.29	447.48	12
7/8 x			
1	2.98	35.70	12
1⅛	3.35	40.16	12
1¼	3.72	44.63	12
1⅜	4.09	49.09	12
1½	4.46	53.56	12
1¾	5.21	62.47	12
2	5.95	71.40	12
2½	7.44	89.26	12
3	8.93	107.10	12
3½	10.41	124.93	12
4	11.90	142.80	12

Continued on following page

COLD DRAWN FLATS
1018

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Random Lengths Feet
7/8 x			
5	14.88	178.50	12
6	17.55	214.20	12
8	23.80	285.10	12
10	29.75	357.00	12
12	35.70	428.40	12
1 x			
1⅛	3.83	45.90	12
1¼	4.25	51.00	12
1⅜	4.68	56.10	12
1½	5.10	61.20	12
1¾	5.95	71.40	12
2	6.80	81.60	12
2¼	7.65	91.80	12
2½	8.50	102.00	12
3	10.20	122.40	12
3½	11.90	142.80	12
4	13.60	163.20	12
4½	15.30	183.60	12
5	17.00	204.00	12
5½	18.70	224.40	12
6	20.40	244.80	12
7	23.80	285.60	12
8	27.20	326.40	12
9	30.60	367.20	12
10	34.00	408.00	12
11	37.40	448.80	12
12	40.80	489.60	12
14⅝	49.73	596.76	12
1⅛ x			
1¼	4.78	57.37	12
1½	5.74	68.86	12
1⅝	6.22	74.59	12
1¾	6.69	80.33	12
2	7.65	91.80	12
2½	9.56	114.76	12
3	11.48	137.70	12
4	15.30	183.60	12
1¼ x			
1⅜	5.84	70.13	12
1½	6.38	76.50	12
1⅝	6.91	82.87	12
1¾	7.44	89.26	12
2	8.50	102.00	12
2¼	9.56	114.76	12
2½	10.63	127.50	12
2¾	11.69	140.26	12
3	12.75	153.00	12
3¼	13.81	165.72	12
3½	14.88	178.50	12
4	17.00	204.00	12
4½	19.13	229.56	12
5	21.25	255.00	12
5½	23.38	280.50	12
6	25.50	306.00	12
8	34.00	408.00	12
10	42.50	510.00	12
12	51.00	612.00	12
1¼ x			
1½	7.01	84.16	12
2	9.35	112.20	12
3	14.03	168.30	12

Size in Inches	Weight per Ft. Lbs.	Est. Wt. 12' Bar	Randon Lengths Feet
1½ x			
1¾	8.93	107.10	12
2	10.20	122.40	12
2¼	11.48	137.76	12
2½	12.75	153.00	12
2¾	14.03	168.30	12
3	15.30	183.60	12
3¼	16.58	198.96	12
3½	17.85	214.20	12
4	20.40	244.80	12
4½	22.95	275.40	12
5	25.50	306.00	12
5½	28.05	336.60	12
6	30.60	367.20	12
8	40.80	489.60	12
10	51.00	612.00	12
12	61.20	734.40	12
1¾ x			
2	11.90	142.80	12
2¼	13.39	160.66	12
2½	14.88	178.50	12
2¾	16.36	196.36	12
3	17.85	214.20	12
3½	20.83	249.90	12
4	23.80	285.60	12
5	29.75	357.00	12
6	35.70	428.40	12
2 x			
2¼	15.30	183.60	12
2½	17.00	204.00	12
2¾	18.70	224.40	12
3	20.40	244.80	12
3½	23.80	285.60	12
4	27.20	326.40	12
4½	30.60	367.20	12
5	34.00	408.00	12
6	40.80	489.60	12
8	54.40	652.80	12
10	68.00	816.00	12
12	81.60	979.20	12
2¼ x			
2½	19.13	229.50	12
2¾	21.04	252.48	12
3	22.95	275.40	12
3½	26.78	321.30	12
4	30.60	367.20	12
4½	34.43	413.10	12
5	38.25	459.00	12
6	45.90	550.80	12
2½ x			
3	25.50	306.00	12
3½	29.76	357.00	12
4	34.00	408.00	12
4½	38.25	459.00	12
5	42.50	510.00	12
6	51.00	612.00	12
8	68.00	816.00	12
10	85.00	1020.00	12
3 x			
4	40.80	489.60	12
5	51.00	612.00	12
6	61.20	734.40	12
8	81.60	979.20	12
10	102.00	1224.00	12

COLD DRAWN FLATS
11L17
LENGTHS – 12 FT. RANDOM

Size	Weight per Ft.	Est. Wt. 12' Bar
5/16 x 1	1.063	12.76
3/8 x 1¼	1.594	19.13
1½	1.913	22.96
2	2.550	30.60
2½	3.188	38.26
3	3.825	45.90
3¼	4.144	49.73
1/2 x ¾	1.275	15.30
⅞	1.488	17.86
1½	2.55	30.60
1¾	2.98	35.70
2	3.40	40.80
2½	4.25	51.00
5/8 x 1	2.13	25.50
1½	3.19	38.26
2	4.25	51.00
3	6.38	76.50
3½	7.44	89.26
3¾	7.97	95.63
4½	9.56	114.76
5½	11.69	140.26
3/4 x 1¼	3.19	38.26
1½	3.83	45.90
2	5.10	61.20
2½	6.38	76.50
3	7.65	91.80
4½	11.48	137.70
5	12.75	153.00
6	15.30	183.60
6½	16.58	198.96
7/8 x 5	14.88	178.50
6½	19.34	232.08
1½	5.10	61.20
1 x 1⅝	5.53	66.30
1¾	5.95	71.40
1⅞	6.27	75.24
2	6.80	81.60
2¼	7.65	91.80
2½	8.50	102.00
2¾	9.35	112.20
3	10.20	122.40
4	13.60	163.20
4½	15.30	183.60
7½	25.50	306.00
8½	28.90	346.80
2	7.65	91.80
2½	9.56	114.76
1⅛ x 3	11.48	137.70
1⅜	5.84	70.13
1½	6.38	76.50
1¾	7.44	89.26
1¼ x 2½	10.63	127.50
3¾	15.94	191.28
4	17.00	204.00
4½	19.13	229.60
5	21.25	255.00
5½	23.38	280.50

Size	Weight per Ft.	Est. Wt. 12' Bar
1⅜ x 1½	7.01	84.16
3¾	17.53	210.36
4	18.70	224.40
4½	21.04	252.48
5½	25.71	308.52
1½ x 1¾	8.93	107.10
2	10.20	122.40
2½	12.75	153.00
3	15.30	183.60
3½	17.85	214.20
4	20.40	244.80
4½	22.95	275.40
5	25.50	306.00
6	30.60	367.20
6½	33.15	397.80
8½	43.35	520.20
1⅝ x 2	11.05	132.60
2½	13.81	165.72
3	16.58	198.96
3½	19.34	232.08
1¾ x 2½	14.88	178.50
3	17.85	214.20
3½	20.83	249.90
3¾	22.31	267.72
4	23.80	285.60
4½	26.78	321.30
5	29.75	357.00
5½	32.73	392.76
6½	38.68	464.16
1⅞ x 3¾	23.91	286.92
4½	28.69	344.28
5½	35.06	420.72
2 x 2½	17.00	204.00
3	20.40	244.80
4	27.20	326.40
4½	30.60	367.20
5	34.00	408.00
5½	37.40	448.80
6	40.80	489.60
6½	44.20	530.40
8	54.40	652.80
8½	57.80	693.60
2⅛ x 6½	46.96	563.52
2¼ x 2½	19.13	229.50
3¾	28.69	344.28
5	38.25	459.00
5½	42.08	504.96
7½	57.38	688.56
2⅜ x 7½	60.56	726.72
2½ x 3	25.50	306.00
3½	29.75	357.00
6½	55.25	663.00
3 x 4	40.80	489.60

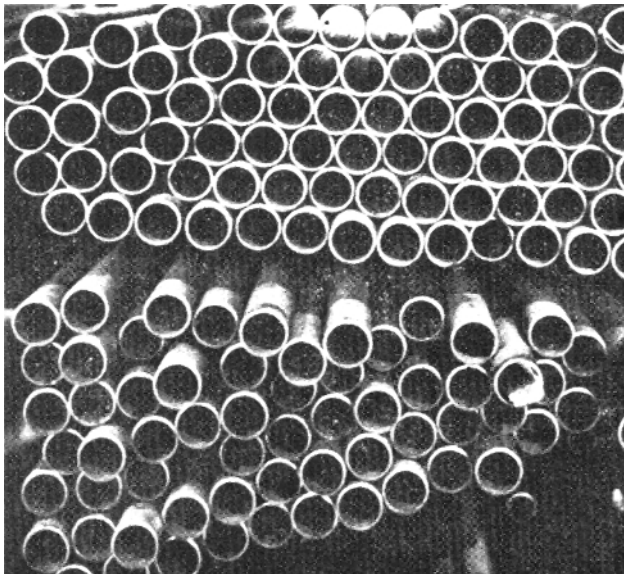
STANDARD MANUFACTURING TOLERANCES

COLD FINISHED CARBON STEEL BARS

All Tolerances Are Minus

Specified Size in Inches	Variations from Size, Inches			
	Max Carbon Range .28% to or Less	Max. Carbon Range Over .28% to .55% Incl.	Strain Relieved Carbon Range to .55% incl.	Max. Carbon Range Over .55% or Heat Treated (All Carbons)
Cold Drawn or Turned and Polished Rounds				
1½ and under	.002	.003	.004	.005
Over 1½ to 2½ , incl.	.003	.004	.005	.006
Over 2½ to 4, incl.	.004	.005	.006	.007
Over 4 to 6, incl.	.005	.006	.007	.008
Over 6 to 8, incl.	.006	.007	.008	.009.
Over 8 to 9, incl.	.007	.008	.009.	.010
Over 9”	.008	.009	.010	.011
Cold Drawn Hexagons				
Up to ¾, incl.	.002	.003	.004	.006
Over ¾ to 1½ , incl.	.003	.004	.005	.007
Over 1½ to 2½, incl.	.004	.005	.006	.008
Over 2½ to 4, incl.	.005	.006	.007	.009.
Cold Drawn Squares				
Up to ¾ , incl.	.002	.004	.005	.007
Over ¾ to 1½ incl.	.003	.005	.006	.008
Over 1½ to 2½, incl.	.004	.006	.007	.009
Over 2½ to 4, incl.	.006	.008	.009	.011
Over 4 to 5, incl.	.010	.012	.014.	
Over 5 to 6, incl.	.014	.016	.018	
Cold Drawn Flats				
Tolerances for flats apply to thickness as well as width				
Width in Inches				
Up to ¾ , incl..	.003	.004	.006	.008
Over ¾ to 1½ incl.	.004	.005	.008	.010
Over 1½ to 3, incl.	.005	.006	.010	.012
Over 3 to 4, incl.	.006	.008	.011	.016
Over 4 to 6, incl.	.008	.010	.012	.020
Over 6	.013	.015		

*Stressproof® tolerances are the same as strain relieved.



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BENDING	ROLLING
CUTTING	SHOT BLASTING
FORMING	THREADING
MITERING	WELDING

Rolling rectangular tubing – another “first step” process

PIPE

COMMERCIAL GRADE:
ASTM-A-120 – produced as butt-welded or seamless product in black or galvanized finish; not produced to any specific chemical requirements or physical properties; not intended for close bending, coiling, or high temperature service. Available in Sch. 40, Sch. 80, and Sch. 160/Double Extra Strong in sizes ⅛” to 16”; this grade is the standard warehouse-distributor stock and will be applied to pipe orders where a specific grade is not requested.

PRESSURE GRADES:
ASTM-A-53 – produced as a butt-welded or seamless product in black or galvanized finish; produced to minimum mechanical properties of 25,000 to 35,000 Psi yield and 45,000 to 50,000 Psi tensile as well as hydrostatic pressure tested; suitable for more extensive fabrication such as flanging (excluding butt-welded) and bending, as well as welding and threading; meets federal specification WW-P404c.

ASTM-A-106 – produced as a seamless product in black or galvanized finish; produced to minimum mechanical properties of 30,000 to 40,000 Psi yield and 48,000 to 70,000 Psi tensile as well as hydrostatic pressure tested; especially suitable for high temperature service as well as flanging, bending, and forming.

ASTM-A-120 – produced as a butt-welded or seamless product in black or hot dipped galvanized finish; subject to hydrostatic pressure testing; not produced to any specific chemical requirements or physical properties; produced as a general purpose pipe for ordinary use such as steam, water, gas or air lines; not intended for close bending, coiling or high temperature service; meets federal specification WW-P-4066.

ASTM-A-135 – produced as a hot rolled electric resistance welded pipe to relatively large diameter, light wall specifications designed to carry liquid, gas, or vapor; grade A suitable for flanging and bending.

STRUCTURAL GRADE:
ASTM-A-501 – produced as a butt-welded product in black or galvanized finish to guaranteed minimum mechanical properties of 36,000 Psi yield and 58,000 Psi tensile; designed for structural applications such as supports, columns and beams; good weldability and formability; not intended for pressure applications.

HIGH YIELD PIPE:
Produced as an electric resistance welded product in the uncoated, hot rolled sheet finish; produced to minimum mechanical properties of 35,000 to 46,000 Psi yield and 58,000 to 60,000 Psi tensile; average minimum yield is 50,000 Psi; wall thickness slightly less than schedule 40; designed for structural applications; good weldability and formability; conforms to ASTM-A-513 and ASTM-A-500 Grade B.

FENCE PIPE:
Produced as a continuous welded pipe in black or galvanized finish; also called lightwall pipe because the wall thickness is 20% less than standard wall pipe; not furnished to any specification, no testing or mechanical properties reported; tolerances apply to OD only, not ID or wall; for use in structural or ornamental applications; limited size range.

REJECT PIPE:
Produced as a butt-welded pipe in either bare, with light rust, or black finish; not subject to any specifications; no testing or mechanical properties reported.

MECHANICAL STEEL TUBING

COLD DRAWN SEAMLESS:
ASTM-A-519 – produced to AISI-C-1026 for improved machinability on sizes throu 9½" O.D.; over 9½" O.D. produced to .25 max carbon; produced from solid billet which is pierced, turned and drawn; suitable for general purpose applications such as rollers, shafts, hydraulic cylinders, and hollow machined parts; generally drawn to O.D. and I. D. dimensions.

HOT FINISHED SEAMLESS:
ASTM-A-519 – prosuced to AISI-C-1026 for improved machinability on all sizes; available in O.D.'s and walll thicknesses larger and heavier than Cold Drawn seamless; suitable for general purpose applications such as rollers and hollow machined parts; produced to O.D. and wall thickness tolerances.

DRAWN OVER MANDREL:
ASTM-A-513, Type 5 – produced to ASI-C-1020 for wall thickness 10 gauge and lighter and AISI-C-1026 for wall thickness heavier than 10 gauge; produced by the electric-resistance-welded method (ERW) and further processed by drawing over a mandrel (for I.D. control) and through a die (for O.D. control); compared to Cold Drawn Seamless, Drawn Over Mandrel Tubing (DOM) has better finish, closer diameter tolerance, less eccentricity and lower cost; suitable for general purpose applications such as machined parts, rollers, shafts and hydraulic cylinders; typical minimum yield strengths are 75,000 Psi yield and 85,000 Psi tensile.

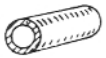
ELECTRIC RESISTANCE WELDED:
ASTM-A-513, Type I (Hot Rolled) and Type II (Cold Rolled) – generally produced to AISI-C-1010 in wall thicknesses 16 gauge and lighter (Cold Rolled) and AISI-C-1010 in wall thickness 14 gauge and heavier (Cold Rolled); produced in the "as welded" condition with flash-in or flash-controlled on the I.D.; suitable for ornamental or light structural applications such as frames, supports, furniture and the like; available in round, square, and rectangular shapes.

COLD DRAWN BUTT WELDED:
ASTM-A-512 – the least expensive drawn tube. Usually produced from E.R.W. hollows. Drawn to O.D. & I.D. dimensions, not intended for pressure applications.

STRUCTURAL STEEL TUBING

ASTM-A-500, Grade B produced from .26 max carbon hot rolled sheet as a cold-formed, welded, square or rectangle structural tubing; produced to minimum mechanical properties of 46,000 Psi yield and 58,000 Psi tensile; intended for structural columns, beams, supports, frames and general fabrication.

STANDARD BLACK PIPE

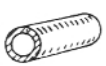


Round – Welded – Plain Ends – Schedule 40
Specificiations ASTM-A-120 ASTM-A-53 Gr. B.**
RANDOM LENGTHS 18 TO 21 FT.
Can be furnished threaded or threaded and coupled

Size in Inches	Wt. per Ft. Lbs.	Wall Thickness Inches	O.D. in Inches	I.D. in Inches
⅛"	.24	.068	.405	.269
¼"	.42	.088	.540	.364
⅜"	.57	.091	.675	.493
½"	.85	.109	.840	.622
¾"	1.13	.113	1.050	.824
1"	1.68	.133	1.315	1.049
1¼"	2.27	.140	1.660	1.380
1½"	2.72	.145	1.900	1.610
2"	3.65	.154	2.375	2.067
2½"	5.79	.203	2.875	2.469
3"	7.58	.216	3.500	3.068
3½"	9.11	.226	4.000	3.548
4"	10.79	.237	4.500	4.026
5"	14.62	.258	5.563	5.047
*6"	18.97	.280	6.625	6.065
*8"	28.55	.322	8.625	7.981
*10"	40.48	.365	10.750	10.020
*12"	49.56	.375	12.750	12.000

Also available galvanized.
* Seamless. ASTM A-53 Gr. B.
** Sizes 1' and larger – available both ASTM-A-120 and ASTM-A-53

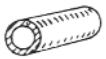
EXTRA STRONG BLACK PIPE



Round – Welded – Plain Ends – Schedule 80
Specificiations ASTM-A-120 ASTM-A-53 Gr. B.
RANDOM LENGTHS 18 TO 21 FT.
Can be furnished threaded or threaded and coupled

Size in Inches	Wt. per Ft. Lbs.	Wall Thickness Inches	O.D. in Inches	I.D. in Inches
½"	1.09	.147	.840	.546
¾"	1.47	.154	1.050	.742
1"	2.17	.179	1.315	.957
1¼"	3.00	.191	1.660	1.278
1½"	3.63	.200	.900	1.500
2"	5.02	.218	2.375	1.939
2½"	7.66	.276	2.875	2.323
3"	10.25	.300	3.500	2.900
3½"	12.51	.318	4.000	3.364
4"	14.98	.337	4.500	3.826
*5"	20.78	.375	5.563	4.813
*6"	28.57	.432	6.625	5.761

Also available galvanized.
* Seamless. ASTM A-53, G. B.



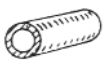
HIGH YIELD PIPE

ASTM-A-513 ASTM-A-500 Grade B

BARE FINISH – UNCOATED

Average Minimum Yield: 50,000 Psi

Size in Inches	Wt. per Ft. Lbs.	Wall Thickness Inches	O.D. in Inches
½"	.85	.109	.840
¾"	1.096	.109	1.050
1"	1.532	.120	1.315
2"	3.520	.148	2.375

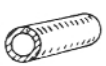


STRUCTURAL BLACK STEEL PIPE

ASTM-A-501 Round – Light Wall

RANDOM LENGTHS 18 TO 21 FT.

Size in Inches	Wt. per Ft. Lbs.	Wall Thickness Inches	O.D. in Inches
1"	1.344	.104	1.315
1¼"	1.816	.110	1.660
1½"	2.176	.114	1.900
2"	2.920	.121	2.375



GALVANIZED PIPE

ASTM-A-120 SCHEDULE 40

HOT DIPPED FINISH

Size in Inches	Wt. per Ft. Lbs.	Wall Thickness Inches	O.D. in Inches	I.D. in Inches
¾"	1.13	.113	1.05	.824
1"	1.68	.133	1.315	1.049
1¼"	2.27	.140	1.66	1.38
1½"	2.72	.145	1.90	1.61
2"	3.65	.154	2.375	2.067
2½"	5.79	.203	2.875	2.469

RECTANGULAR ELECTRIC WELDED STEEL TUBING

LOW CARBON MECHANICAL – ASTM-A-513

LENGTHS – 20 FOOT, RANDOM

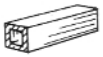
Size in Inches	Wall Ga.	Wall Dec.	Wt. per Ft. Lbs.
1½" x ¾ x	14	.083	1.176
1½ x 1 x	16	.065	1.048
	14	.083	1.317
	11	.120	1.844
2 x 1 x	16	.065	1.269
	14	.083	1.600
	11	.120	2.252
2 x 1¼ x	14	.083	1.740
2 x 1½ x	14	.083	1.881
	11	.120	2.660
2¼ x 1 x	14	.083	1.882
2½" x 1½ x	14	.083	2.164
	11	.120	3.068
3 x 1 x	14	.083	2.164
	11	.120	3.068
3 x 1½ x	14	.083	2.446
	12	.109	3.173
	11	.120	3.476
	7	.180	5.067
3 x 2 x	14	.083	2.728
	11	.120	3.884
4 x 2 x	14	.083	3.292
	11	.120	4.700
	5	.220	8.315
4 x 2½ x	11	.120	5.110
5 x 2½ x	11	.120	5.922
	7	.180	8.737

RECTANGULAR STRUCTURAL STEEL TUBING

ASTM-A-500 Gr. B

LENGTHS – 20 AND 40 FT. RANDOM

Size in Inches	Wall	Wt. per Ft. Lbs.
2 x 1½ x	.188	4.32
	.250	5.41
3 x 1½ x	.125	3.48
	.1875	4.96
3 x 2 x	.125	3.90
	.1875	5.59
	.250	7.11
	.313	8344
3½ x 2½ x	.1875	6.87
4 x 2 x	.125	4.75
	.1875	6.88
	.250	8.81
	.313	10.58
4 x 3 x	.125	5.61
	.188	8.16
	.250	10.51
	.313	12.70
5 x 2 x	.1875	8.15
	.250	10.51
5 x 3 x	.1875	9.42
	.250	12.21
	.313	14.83
	.375	17.27
6 x 2 x	.188	9.42
	.250	12.21
6 x 3 x	.1875	10.70
	.250	13.91
	.313	16.96
	.375	19.82
6 x 4 x	.1875	11.97
	.250	15.62
	.313	19.08
	.375	22.37
	.500	28.43
7 x 5 x	.1875	14.53
	.250	19.02
	.313	23.34
7 x 5 x	.375	27.48
	.500	35.24
8 x 2 x	.1875	11.97
	.250	15.62
8 x 3 x	.1875	13.25
	.250	17.32
	.375	24.93
8 x 4 x	.1875	14.53
	.250	19.02
	.313	23.34
	.375	27.48
	.500	35.24
8 x 6 x	.1875	17.08
	.250	22.42
	.313	27.59
	.375	32.58
	.500	42.05
10 x 2 x	.1875	14.53
10 x 3 x	.250	20.72
10 x 4 x	.1875	17.08
	.250	22.42
	.313	27.59
	.375	32.58
	.500	42.05
10 x 6 x	.250	25.82
	.313	31.84
	.375	37.69
	.500	48.85
10 x 8 x	.250	29.23
	.375	42.79
	.500	55.66
12 x 2 x	.1875	17.08
12 x 4 x	.250	25.82
	.375	37.69
12 x 6 x	.250	29.23
	.375	42.79
	.500	55.66
12 x 8 x	.375	47.90
	.500	62.46

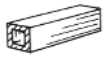


SQUARE
ELECTRIC WELDED STEEL TUBING

LOW CARBON MECHANICAL
LENGTHS – 20 FOOT, RANDOM

Size & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.
⅜ x ⅜			
20	.035	.305	.1618
16	.065	.245	.2740
½ x 1½			
20	.035	.430	.2213
18	.049	.402	.3005
16	.065	.370	.3845
⅝ x ⅝			
20	.035	.555	.2808
18	.049	.527	.3838
16	.065	.495	.4950
¾ x ¾			
20	.035	.680	.3403
18	.049	.652	.4671
16	.065	.620	.6055
14	.083	.584	.7529
11	.120	.510	1.0280
⅞ x ⅞			
18	.049	.777	.5504
16	.065	.745	.7160
14	.083	.709	.8940
1 x 1			
20	.035	.930	.4593
18	.049	.902	.6337
16	.065	.870	.8265
14	.083	.834	1.035
12	.109	.782	1.321
11	.120	.760	1.436
1⅛ x 1⅛			
18	.049	1.027	.7170
16	.065	.995	.9370
1¼ x 1¼			
18	.049	1.152	.8003
16	.065	1.120	1.048
14	.083	1.084	1.317
13	.095	1.060	1.492
12	.109	1.032	1.691
11	.120	1.010	1.844
1½ x 1½			
18	.049	1.402	.9669
16	.065	1.370	1.269
14	.083	1.334	1.600
13	.095	1.310	1.815
12	.109	1.282	2.062
11	.120	1.260	2.252
1¾ x 1¾			
16	.065	1.620	1.490
14	.083	1.584	1.882
11	.120	1.510	2.660
2 x 2			
18	.049	1.902	1.300
16	.065	1.870	1.711
14	.083	1.834	2.164
13	.095	1.810	2.461
11	.120	1.760	3.068
2¼ x 2¼			
16	.065	2.120	1.932
2½ x 2½			
16	.065	2.370	2.153
3 x 3			
14	.083	2.834	3.292

SQUARE STRUCTURAL STEEL TUBE



ASTM A-500 Gr. B

LENGTHS – 20 and 40 FT. RANDOM

Size & Wall		Wt. per Ft. Lbs.
¾ x ¾ x	.125	1.03
1 x 1 x	.073*	.91
	.095	1.17
	.125	1.44
1¼ x 1¼ x	.135	2.03
	.188‡	2.40
1½ x 1½ x	.145‡	2.35
	.188‡	3.04
	.250‡	3.70
1¾ x 1¾ x	.250‡	5.10
2 x 2 x	.125	3.05
	.154‡	3.65
	.188	4.32
	.250	5.41
2½ x 2½ x	.125	3.90
	.188	5.59
	.250	7.11
3 x 3 x	.125	4.75
	.1875	6.87
	.250	8.81
	.313	10.58
3½ x 3½ x	.125	5.61
	.1875	8.15
	.250	10.51
	.313	12.70
4 x 4 x	.125	6.46
	.1875	9.42
	.250	12.21
	.313	14.83
	.375	17.27
	.500	21.63
5 x 5 x	.1875	11.97
	.250	15.62
	.313	19.08
	.375	22.37
	.500	28.43
6 x 6 x	.1875	14.53
	.250	19.02
	.313	23.34
	.375	27.48
	.500	35.24
7 x 7 x	.1875	17.08
	.250	22.42
	.313	27.59
	.375	32.58
	.500	42.05
8 x 8 x	.1875	19.63
	.250	25.82
	.313	31.84
	.375	37.69
	.500	48.85
10 x 10 x	.250	32.63
	.313	40.35
	.375	47.90
	.500	62.46
12 x 12 x	.250	39.43
	.313	48.86
	.375	58.10
	.500	76.07
14 x 14 x	.500	89.68

* ASTM-A-513
‡ASTM A618 Gr. 3 21 Foot Lengths – Hot Rolled – Butt Wellded Pipe

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED
STANDARD STOCK LENGTHS 17' - 24'

Cold Drawn Seamless	–	ASTM A-519
Hot Finished Seamless	–	ASTM A-519
Drawn Over Mandrel	–	ASTM A-513 Type 5
Cold Drawn Butt Welded	–	ASTM A-512
Electric Welded	–	ASTM A-513 Type 1 HR Type 2 CR

O.D. & Gauge	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
1/4 x							
23	.025	.200	.0601	....	x	....	....
22	.028	.194	.0664	....	x	....	....
20	.035	.180	.0804	....	x	....	....
18	.049	.152	.1052	....	x	....	....
16	.065	.120	.1284	....	x	....	....
14	.083	.084	.1480	....	....	....	....
13	.095	.060	.1573	x	....	....	....
5/16 x							
22	.028	.256	.0852	....	x	....	....
20	.035	.242	.1039	....	x	....	....
18	.049	.214	.1382	....	x	....	....
16	.065	.182	.1722	....	x	....	....
14	.083	.146	.2039	....	x	....	....
13	.095	.122	.2212	....	x	....	....
12	.109	.094	.2375	x	x	....	....
11	.120	.072	.2473	x	....	....	....
1/8	.125	.063	.2510	x	....	....	....
3/8 x							
22	.028	.319	.1038	....	x	x	....
20	.035	.305	.1271	....	x	x	....
19	.042	.291	.1494	....	x	....	....
18	.049	.277	.1706	....	x	x	....
17	.058	.259	.1964	....	x	....	....
16	.065	.245	.2125	....	x	x	....
13	.095	.185	.2841	....	x	....	....
12	.109	.157	.3097	x	x	....	....
1/8	.125	.125	.3338	....	x	....	....
10	.134	.107	.3449	x	x	....	....
7/16 x							
20	.035	.367	.1506	....	x	x	....
18	.049	.339	.2036	....	x	x	....
17	.058	.321	.2354	....	x	....	....
16	.065	.307	.2589	....	x	x	....
14	.083	.271	.3147	....	x	....	....
13	.095	.247	.3480	....	x	....	....
12	.109	.219	.3830	....	x	....	....
1/8	.125	.188	.4179	....	x	....	....
10	.134	.169	.4351	x	....	....	....
1/2 X							
24	.022	.456	.1123	....	x	....	....
22	.028	.444	.1411	....	x	....	....
21	.032	.436	.1599	....	x	....	....
20	.035	.430	.1738	....	x	x	....
19	.042	.416	.2054	...	x	....	....

Continued on following page

ROUND MECHANICAL TUBE
COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
1/2 x							
18	.049	.402	.2360	....	x	x	....
17	.058	.384	.2738	....	x	....	....
16	.065	.370	.3020	....	x	x	x
15	.072	.356	.3291	....	x	....	....
14	.083	.334	.3696	....	x	....	x
13	.095	.310	.4109	....	x	....	x
12	.109	.282	.4552	....	x	....	....
11	.120	.260	.4870	....	x	....	x
1/8	.125	.250	.5006	....	x	....	....
10	.134	.232	.5238	x	x	....	....
5/32	.156	.187	.5731	x	x	....	....
3/16	.187	.125	.6264	....	x	....	....
9/16 x							
20	.035	.492	.1974	....	x	....	....
18	.049	.464	.2690	....	x	x	....
16	.065	.432	.3457	....	x	x	....
14	.083	.396	.4255	....	x	....	....
13	.095	.372	.4748	....	x	....	x
12	.109	.344	.5285	....	x	....	....
11	.120	.322	.5677	....	x	....	x
1/8	.125	.313	.5847	....	x	....	....
5/32	.156	.250	.6781	x	....	....	....
3/16	.187	.187	.7529	x	....	....	....
5/8 x							
20	.035	.555	.2205	....	x	x	....
18	.049	.527	.3014	....	x	x	....
17	.058	.509	.3512	....	x	....	x
16	.065	.495	.3888	....	x	x	....
15	.072	.481	.4252	....	x	....	....
14	.083	.459	.4805	....	x	x	x
13	.095	.435	.5377	....	x	....	x
12	.109	.407	.6007	....	x	....	x
11	.120	.385	.6472	....	x	....	x
1/8	.125	.375	.6675	....	x	....	....
10	.134	.357	.7027	....	x	....	x
5/32	.156	.312	.7814	x	x	....	x
3/16	.187	.250	.8774	x	x	....	....
7/32	.219	.187	.9496	x	x	....	....
1/4	.250	.125	1.001	x	....	....	....
11/16 x							
18	.049	.589	.3344	....	x	....	....
17	.058	.571	.3902	....	x	....	....
16	.065	.557	.4325	....	x	x	....
14	.083	.521	.5363	....	x	....	x
13	.095	.497	.6017	....	x	....	x
12	.109	.469	.6740	....	x	....	x
11	.120	.447	.7279	....	x	....	x
1/8	.125	.4375	.7516	....	x	....	....
10	.134	.419	.7928	....	x	....	....
5/32	.156	.375	.8864	x	....	....	....
3/16	.187	.312	1.004	x	....	....	
7/32	.219	.250	1.097	x	....	....	....

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
3/4 x							
24	.022	.706	.1711	....	x	....	....
22	.028	.694	.2159	....	x	....	....
20	.035	.680	.2673	....	x	....	....
18	.049	.652	.3668	....	x	....	....
17	.058	.634	.4287	....	x	....	....
16	.065	.620	.4755	....	x	x	x
14	.083	.584	.5913	x	x	x	x
13	.095	.560	.6646	....	x	x	x
12	.109	.532	.7462	....	x	x	x
11	.120	.510	.8074	....	x	x	x
1/8	.125	.500	.8344	....	x	....	....
10	.134	.482	.8816	....	x	....	x
5/32	.156	.437	.9897	....	x	....	x
11/64	.172	.406	1.062	....	....	....	x
3/16	.187	.376	1.128	....	x	....	x
7/32	.219	.312	1.242	x	x	....	....
1/4	.250	.250	1.335	x	x	....	....
13/16 x							
22	.028	.756	.2347	....	x	....	....
20	.035	.742	.2908	....	x	....	....
18	.049	.714	.3998	....	x	....	....
16	.065	.682	.5193	....	x	x	....
14	.083	.646	.6471	....	x	....	x
12	.109	.594	.8195	x	....	....	x
11	.120	.572	.8881	....	x	....	x
1/8	.125	.563	.9185	....	x	....	....
10	.134	.544	.9717	....	x	....	....
5/32	.156	.500	1.095	....	x	....	....
3/16	.187	.437	1.255	....	x	....	x
7/32	.219	.375	1.389	x	....	....	....
1/4	.250	.312	1.503	x	....	....	....
7/8 x							
20	.035	.805	.3140	....	x	x	....
18	.049	.777	.4323	....	x	x	....
17	.058	.759	.5061	....	x	....	....
16	.065	.745	.5623	....	x	x	x
15	.072	.731	.6175	....	x	....	....
14	.083	.709	.7021	....	x	x	....
13	.095	.685	.7914	....	x	x	....
12	.109	.657	.8917	....	x	....	x
11	.120	.635	.9676	....	x	....	x
10	.134	.607	1.060	....	x	....	....
5/32	.156	.562	1.198	....	x	....	x
3/16	.187	.500	1.379	x	x	....	....
7/32	.219	.437	1.534	x	x	....	....
1/4	.250	.375	1.669	x	x	....	....
9/32	.281	.313	1.783	x	....	....	....
5/16	.313	.250	1.879	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
15/16 x							
20	.035	.867	.3375	....	x	....	....
18	.049	.839	.4652	....	x	....	....
16	.065	.807	.6060	....	x	....	....
14	.083	.771	.7579	....	x	....	....
13	.095	.747	.8553	....	x	....	x
12	.109	.719	.9651	....	x	....	....
11	.120	.697	1.048	....	x	....	x
1/8	.125	.688	1.085	....	x	....	....
10	.134	.669	1.151	x	x	....	x
5/32	.156	.625	1.303	...	x	....	....
3/16	.187	.562	1.506	x	...	....	....
7/32	.219	.500	1.682	x	...	....	....
1/4	.250	.437	1.837	x	...	....	....
1 x							
22	.028	.944	.2907	....	x	....	....
20	.035	.930	.3607	....	x	x	....
18	.049	.902	.4977	....	x	x	....
16	.065	.870	.6491	....	x	x	x
15	.072	.856	.7136	x	x	....	....
14	.083	.834	.8129	....	x	x	x
13	.095	.810	.9182	....	x	x	x
12	.109	.782	1.037	....	x	x	x
11	.120	.760	1.128	....	x	x	x
1/8	.125	.750	1.168	....	x	....	....
10	.134	.732	1.239	....	x	....	x
5/32	.156	.687	1.406	....	x	....	x
11/64	.172	.656	1.521	....	....	....	x
7	.180	.640	1.576	....	....	....	x
3/16	.187	.625	1.630	....	x	....	x
7/32	.219	.562	1.827	x	x	....	x
1/4	.250	.500	2.003	x	x	....	x
9/32	.281	.437	2.158	x	....	....	....
5/16	.313	.375	2.297	x	....	....	....
11/32	.344	.312	2.410	x	....	....	....
3/8	.375	.250	2.503	x	....	....	....
1 1/16 x							
22	.028	1.006	.3095	....	x	....	....
20	.035	.992	.3843	....	x	....	....
18	.049	.964	.5306	....	x	....	....
16	.065	.932	.6928	....	x	x	....
14	.083	.896	.8687	....	x	....	....
13	.095	.872	.9821	....	x	....	....
12	.109	.844	1.111	....	x	....	....
11	.120	.822	1.209	....	x	....	x
1/8	.125	.813	1.252	....	x	....	....
10	.134	.795	1.330	....	x	....	x
5/32	.156	.750	1.511	....	x	....	....
3/16	.187	.687	1.757	....	x	....	x
7/32	.219	.625	1.974	x	x	....	....
1/4	.250	.562	2.171	x	x	....	....
9/32	.281	.500	2.347	x	....	....	....
5/16	.313	.437	2.507	x	....	....	....
3/8	.375	.313	2.755	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
(continued from preceding page)							
1⅛ x							
24	.022	1.081	.2592	x	....	....	....
22	.028	1.069	.3280	x	....	....	....
20	.035	1.055	.4074	....	x	x	....
18	.049	1.027	.5631	....	x	x	....
16	.065	.995	.7359	....	x	x	x
14	.083	.959	.9237	....	x	x	....
13	.095	.907	1.045	....	x	....	x
12	.109	.935	1.183	....	x	....	x
11	.120	.885	1.288	....	x	x	x
⅛	.125	.875	1.335	...	x	....	....
10	.134	.857	1.418	....	x	....	x
5/32	.156	.812	1.614	....	x	....	x
11/64	.172	.781	1.751	....	...	....	x
3/16	.187	.750	1.881	....	x	....	x
7/32	.219	.687	2.119	....	x	....	x
¼	.250	.625	2.336	x	x	....	x
9/32	.281	.563	2.533	x	....	....	....
5/16	.313	.500	2.714	x	....	....	....
⅜	.375	.375	3.004	x	....	....	....
1 3/16 x							
22	.028	1.131	.3469	....	x	....	....
20	.035	1.117	.4310	....	x	....	....
18	.049	1.089	.5961	....	x	....	....
16	.065	1.057	.7796	....	x	x	....
14	.083	1.021	.9795	....	x	....	....
13	.095	.997	1.109	....	x	....	....
12	.109	.970	1.256	....	x	....	....
11	.120	.947	1.369	....	x	....	....
⅛	.125	.938	1.419	....	x	....	....
5/32	.156	.875	1.719	....	x	....	....
3/16	.187	.812	2.008	....	x	....	....
7/32	.219	.750	2.266	x	x	....	....
¼	.250	.687	2.504	x	....	....	....
5/16	.313	.562	2.925	x	....	....	....
1¼ x							
22	.028	1.194	.3654	....	x	....	....
20	.035	1.180	. 4542	....	x	x	....
18	.049	1.152	.6285	....	x	x	....
16	.065	1.120	.8226	....	x	x	x
14	.083	1.084	1.034	....	x	x	....
13	.095	1.060	1.172	....	x	x	x
12	.109	1.032	1.328	....	x	x	x
11	.120	1.010	1.448	....	x	x	x
⅛	.125	1.000	1.502	....	x	....	....
10	.134	.982	1.597	....	x	x	x
5/32	.156	.937	1.823	....	x	....	x
3/16	.187	.875	2.132	....	x	....	x
7/32	.219	.812	2.411	x	x	....	x
¼	.250	.750	2.670	x	....	....	x..
9/32	.281	.687	2.908	x	....	....	x
5/16	.313	.625	3.132	x	....	....	x
11/32	.344	.562	3.329	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
(continued from preceding page)							
1¼ x							
3/16	.375	.500	3.504	x	....	....	....
7/16	.437	.375	3.798	x	....	....	....
1 5/16 x							
20	.035	1.242	.4777	....	x	....	....
18	.049	1.214	.6615	....	x	....	....
16	.065	1.182	.8664	....	x	....	....
14	.083	1.146	1.090	....	x	....	....
13	.095	1.122	1.236	....	x	....	....
12	.109	1.094	1.402	....	x	....	....
11	.120	1.072	1.529	...	x	....	x
⅛	.125	1.063	1.586	....	x	....	....
10	.134	1.044	1.687	....	x	....	x
9	.148	1.017	1.841	....	x	....	....
5/32	.156	1.000	1.928	....	x	....	x
3/16	.187	.937	2.259	....	x	....	x
7/32	.219	.875	2.559	....	x	....	x
¼	.250	.812	2.838	x	x	....	x
9/32	.281	.750	3.097	x	x	....	x
5/16	.313	.687	3.343	x	x	....	x
⅜	.375	.562	3.757	x	....	....	....
1⅜ x							
20	.035	1.305	.5009	....	x	x	....
18	.049	1.277	.6939	....	x	x	....
16	.065	1.245	.9094	....	x	x	....
14	.083	1.209	1.145	....	x	x	....
13	.095	1.185	1.299	....	x	....	x
12	.109	1.157	1.474	....	x	x	x
11	.120	1.135	1.608	....	x	....	x
⅛	.125	1.125	1.669	....	x	....	....
10	.134	1.107	1.776	....	x	....	x
5/32	.156	1.062	2.031	....	x	....	x
11/64	.172	1.031	2.210	....	x	....	....
3/16	.187	1.000	2.383	....	x	....	x
7/32	.219	.937	2.704	....	x	....	x
¼	.250	.875	3.004	x	x	....	x
9/32	.281	.813	3.283	x	x	....	....
5/16	.313	.750	3.550	x	x	....	....
⅜	.375	.625	4.005	x	x	....	....
½	.500	.375	4.673	x	....	....	....
1 7/16 x							
20	.035	1.367	.5244	....	x	....	....
18	.049	1.339	.7269	....	x	....	....
16	.065	1.307	.9531	....	x	x	....
14	.083	1.271	1.201	....	x	....	....
13	.095	1.247	1.363	....	x	....	....
11	.120	1.197	1.689	....	x	....	x
⅛	.125	1.188	1.753	....	x	....	....
10	.134	1.170	1.866	....	x	....	....
5/32	.156	1.125	2.136	....	x	....	x
3/16	.187	1.062	2.510	....	x	....	....
7/32	.219	1.000	2.851	....	x	....	x
¼	.250	.937	3.172	....	x	....	x

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
1½ x							
22	.028	1.444	.4402	....	x	....	....
20	.035	1.430	.5476	....	x	x	....
18	.049	1.402	.7593	....	x	x	....
16	.065	1.370	.9962	....	x	x	x
14	.083	1.334	1.256	....	x	x	x
13	.095	1.310	1.426	....	x	x	x
12	.109	1.282	1.619	....	x	x	x
11	.120	1.260	1.769	....	x	x	x
⅛	.125	1.250	1.836	....	x	....	....
10	.134	1.232	1.955	...	x	x	x
5/32	.156	1.187	2.239	....	x	....	x
3/16	.187	1.125	2.634	....	x	....	x
7/32	.219	1.062	2.996	....	x	....	x
¼	.250	1.000	3.338	x	....	....	x
9/32	.281	.938	3.658	x	x	....	....
5/16	.313	.875	3.968	....	x	....	x
11/32	.344	.812	4.247	x	....	....	....
⅜	.375	.750	4.506	x	....	....	....
7/16	.438	.625	4.968	x	....	....	....
½	.500	.500	5.340	x	....	....	....
1 9/16 x							
20	.035	1.493	.5712	....	x	....	....
16	.065	1.432	1.040	....	x	....	....
12	.109	1.345	1.693	....	x	....	....
11	.120	1.322	1.849	....	x	....	....
⅛	.125	1.313	1.920	....	x	....	....
10	.134	1.295	2.045	....	x	....	....
5/32	.156	1.250	2.344	....	x	....	....
3/16	.187	1.187	2.761	x	x	....	x
¼	.250	1.062	3.506	x	x	....	....
5/16	.313	.937	4.179	....	x	....	....
⅜	.375	.812	4.758	....	x	....	....
1⅝ x							
20	.035	1.555	.5943	....	x	x	....
18	.049	1.527	.8248	....	x	x	....
16	.065	1.495	1.083	....	x	x	....
14	.083	1.459	1.367	....	x	x	....
13	.095	1.435	1.552	....	x	....	x
12	.109	1.407	1.765	....	x	....	x
11	.120	1.385	1.929	....	x	x	x
⅛	.125	1.375	2.003	....	x	....	....
10	.134	1.357	2.134	....	x	....	x
5/32	.156	1.312	2.447	....	x	....	x
3/16	.187	1.250	2.885	x	x	....	x
7/32	.219	1.187	3.289	x	x	....	x
¼	.250	1.125	3.671	x	x	....	x
9/32	.281	1.063	4.033	x	x	....	x
5/16	.313	1.000	4.386	x	x	....	x
⅜	.375	.875	5.006	x	....	....	....
7/16	.438	.749	5.553	x	....	....	....
½	.500	.625	6.008	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
1 11/16 x							
16	.065	1.558	1.127	....	x	....	....
11	.120	1.447	2.010	....	x	....	....
5/32	.156	1.376	2.552	....	x	....	....
3/16	.187	1.312	3.012	....	x	....	....
¼	.250	1.188	3.839	....	x	....	....
1¾ x							
20	.035	1.680	.6411	....	x	x	....
18	.049	1.652	.8902	....	x	x	....
16	.065	1.620	1.170	...	x	x	....
14	.083	1.584	1.478	....	x	x	....
13	.095	1.560	1.679	....	x	x	x
12	.109	1.532	1.910	....	x	x	x
11	.120	1.510	2.089	....	x	x	x
⅛	.125	1.500	2.169	....	x	....	....
10	.134	1.482	2.313	....	x	....	....
5/32	.156	1.437	2.656	....	x	....	x
3/16	.187	1.375	3.136	....	x	....	x
7/32	.219	1.312	3.581	....	x	....	x
¼	.250	1.250	4.005	x	x	....	x
9/32	.281	1.188	4.409	....	x	....	x
5/16	.313	1.125	4.804	x	x	....	x
⅜	.375	1.000	5.507	x	....	....	....
7/16	.438	.875	6.137	x	....	....	....
½	.500	.750	6.675	x	....	....	....
9/16	.563	.624	7.137	x	....	....	....
1 13/16 x							
⅛	.125	1.563	2.253	....	x	....	....
5/32	.156	1.501	2.761	....	x	....	....
3/16	.187	1.439	3.263	x	x	....	....
¼	.250	1.313	4.173	....	x	....	....
1⅞ x							
20	.035	1.805	.6878	....	....	x	....
18	.049	1.777	.9556	....	x	x	....
16	.065	1.745	1.257	....	x	x	....
14	.083	1.709	1.589	....	x	x	....
13	.095	1.685	1.806	....	x	x	....
12	.109	1.657	2.056	....	x	....	....
11	.120	1.635	2.249	....	x	x	x
⅛	.125	1.625	2.336	....	x	....	x
10	.134	1.607	2.492	....	x	....	....
5/32	.156	1.562	2.864	....	x	....	x
3/16	.187	1.500	3.387	....	x	....	x
7/32	.219	1.437	3.873	....	x	....	x
¼	.250	1.375	4.339	x	x	....	x
9/32	.281	1.313	4.784	....	x	....	x
5/16	.313	1.250	5.222	x	x	....	....
⅜	.375	1.125	6.008	x	x	....	....
7/16	.438	1.000	6.722	x	....	....	....
½	.500	.875	7.343	x	....	....	...
9/16	.563	.750	7.889	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

LENGTHS – See Page 67

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
1 15/16 x							
1/8	.125	1.688	2.420	....	x	....	....
5/32	.156	1.626	2.969	....	x	....	....
7/32	.219	1.499	4.021	....	x	....	....
1/4	.250	1.437	4.507	....	x	....	....
3/8	.375	1.188	6.260	x	....	....	....
2 x							
20	.035	1.930	.7345	....	....	x	....
18	.049	1.902	1.021	....	x	x	....
16	.065	1.870	1.343	....	x	x	....
14	.083	1.834	1.699	...	x	x	....
13	.095	1.810	1.933	....	x	x	....
12	.109	1.782	2.201	....	x	x	x
11	.120	1.760	2.409	....	x	x	x
1/8	.125	1.751	2.503	....	x	....	....
10	.134	1.732	2.670	....	x	x	x
5/32	.156	1.687	3.072	....	x	....	x
7	.180	1.640	3.499	....	x	x	....
3/16	.187	1.625	3.638	....	x	x	x
7/32	.219	1.562	4.166	....	x	....	x
1/4	.250	1.500	4.673	x	x	....	x
9/32	.281	1.438	5.159	....	x	....	x
5/16	.313	1.375	5.639	....	x	....	x
11/32	.344	1.312	6.084	....	x	....	....
3/8	.375	1.250	6.508	x	x	....	x
7/16	.438	1.125	7.307	x	....	....	....
1/2	.500	1.000	8.010	x	....	....	....
9/16	.563	.876	8.640	x	....	....	....
5/8	.625	.750	9.178	x	....	....	....
3/4	.750	.500	10.010	x	....	....	....
2 1/16 x							
5/32	.156	1.750	3.177	....	x	....	....
3/16	.187	1.689	3.765	....	x	....	....
1/4	.250	1.562	4.841	....	x	....	....
5/16	.313	1.437	5.850	....	x		
2 1/8 x							
20	.035	2.055	7.813	....	x	x	....
18	.049	2.027	1.086	....	x	x	....
16	.065	1.995	1.430	....	x	x	....
14	.083	1.959	1.810	x	x	x	....
13	.095	1.935	2.060	....	x	x	....
11	.120	1.885	2.570	....	x	....	x
1/8	.125	1.875	2.670	....	x	....	....
5/32	.156	1.812	3.281	....	x	....	x
3/16	.187	1.750	3.889	....	x	....	x
7/32	.219	1.687	4.458	x	x	....	....
1/4	.250	1.625	5.006	x	x	....	x
9/32	.281	1.563	5.534	x	x	....	x
5/16	.313	1.500	6.057	....	x	....	....
3/8	.375	1.375	7.009	x	x	....	....
7/16	.438	1.250	7.892	x	x	....	....
1/2	.500	1.125	8.678	x	....	....	....
9/16	.563	1.000	9.392	x	....	....	....
5/8	.625	.875	10.101	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
2 3/16 x							
11	.120	1.948	2.650	....	....	x	....
1/4	.250	1.688	5.174	....	x	....	....
9/32	.281	1.625	5.723	....	x	....	....
2 1/4 x							
20	.035	2.180	.828	....	....	x	....
18	.049	2.152	1.152	....	x	x	....
16	.065	2.120	1.517	....	x	x	....
14	.083	2.084	1.921	....	x	x	....
13	.095	2.060	2.186	....	x	....	x
12	.109	2.032	2.492	...	x	x	x
11	.120	2.010	2.730	....	x	x	x
1/8	.125	2.000	2.837	....	x	....	....
10	.134	1.982	3.028	....	x	....	....
5/32	.156	1.937	3.489	....	x	....	x
3/16	.187	1.875	4.140	....	x	....	x
7/32	.219	1.812	4.750	....	x	....	x
1/4	.250	1.750	5.340	....	x	....	x
9/32	.281	1.688	5.909	....	x	....	....
5/16	.313	1.625	6.475	....	x	....	x
11/32	.344	1.562	7.002	....	x	....	....
3/8	.375	1.500	7.509	x	x	....	x
7/16	.438	1.375	8.476	x	....	....	....
1/2	.500	1.250	9.345	x	....	....	....
9/16	.563	1.124	10.140	x	....	....	....
5/8	.625	1.000	10.850	x	....	....	....
3/4	.750	.750	12.020	x	....	....	....
2 5/16 x							
3/16	.187	1.939	4.267	....	x	....	....
1/4	.250	1.813	5.508	....	x	....	....
2 3/8 x							
18	.049	2.277	1.217	....	x	x	....
16	.065	2.245	1.604	....	x	x	....
14	.083	2.209	2.032	....	x	x	....
13	.095	2.185	2.313	....	x	....	....
11	.120	2.135	2.890	....	x	x	....
1/8	.125	2.125	3.004	....	x	....	....
5/32	.156	2.062	3.697	....	x	....	x
3/16	.187	2.000	4.391	....	x	....	x
7/32	.219	1.937	5.043	x	x	....	x
1/4	.250	1.875	5.674	x	x	....	....
9/32	.281	1.813	6.284	....	x	....	....
5/16	.313	1.750	6.893	x	x	....	....
11/32	.344	1.687	7.462	....	x	....	....
3/8	.375	1.625	8.010	x	x	....	....
7/16	.438	1.500	9.061	x	....	....	....
1/2	.500	1.375	10.010	x	....	....	....
9/16	.563	1.249	10.900	x	....	....	....
5/8	.625	1.125	11.680	x	....	....	....
3/4	.750	.875	13.020	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

LENGTHS – See Page 67

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
2½ x							
18	.049	2.402	1.283	....	....	x	....
16	.065	2.370	1.690	....	x	x	....
14	.083	2.334	2.143	....	x	x	....
13	.095	2.310	2.440	....	x	x	....
12	.109	2.282	2.783	....	x	....	....
11	.120	2.260	3.050	....	x	x	x
⅛	.125	2.250	3.171	....	x	....	....
10	.134	2.232	3.386	....	x	....	....
5/32	.156	2.187	3.905	....	x	....	x
7	.180	2.140	4.460	...	x	x	....
3/16	.187	2.125	4.642	....	x	....	x
7/32	.219	2.062	5.335	....	x	....	x
¼	.250	2.000	6.008	x	x	....	x
9/32	.281	1.937	6.659	....	x	....	....
5/16	.313	1.875	7.311	....	x	....	x
11/32	.344	1.812	7.921	....	x	....	....
⅜	.375	1.750	8.511	x	x	....	x
7/16	.438	1.625	9.646	x	x	....	....
½	.500	1.500	10.680	x	....	....	....
9/16	.563	1.375	11.650	x	....	....	....
⅝	.625	1.250	12.520	x	....	....	....
¾	.750	1.000	14.020	x	....	....	...
2 9/16 x							
3/16	.188	2.187	4.769	....	....	....	x
¼	.250	2.062	6.176	x	x	....	....
2⅝ x							
18	.049	2.528	1.348	....	....	x	....
16	.065	2.495	1.777	....	x	x	....
14	.083	2.459	2.253	....	....	x	....
13	.095	2.435	2.567	....	x	....	....
12	.109	2.407	2.929	....	x	....	....
11	.120	2.385	3.210	....	x	x	....
⅛	.125	2.375	3.338	....	x	....	....
5/32	.156	2.312	4.114	....	x	....	....
7	.180	2.265	4.700	....	....	x	....
3/16	.187	2.250	4.893	....	x	....	....
7/32	.219	2.187	5.627	x	x	....	x
¼	.250	2.125	6.341	....	x	....	x
9/32	.281	2.063	7.035	....	x	....	....
5/16	.313	2.000	7.729	x	x	....	....
⅜	.375	1.875	9.011	x	x	....	....
7/16	.438	1.751	10.230	x	....	....	....
½	.500	1.625	11.350	x	....	....	....
9/16	.563	1.501	12.400	x	....	....	....
⅝	.625	1.375	13.350	x	....	....	....
2¾ x							
18	.049	2.652	1.413	....	....	x	....
16	.065	2.620	1.864	....	x	x	....
14	.083	2.584	2.364	....	x	x	....
13	.095	2.560	2.694	....	x	x	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED
ELECTRIC WELDED C.D. BUTT WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded	C.D.Butt Welded
2¾ x							
11	.120	2.510	3.371	....	x	x	x
⅛	.125	2.500	3.504	....	x	....	....
10	.134	2.482	3.744	....	x	....	....
5/32	.156	2.437	4.322	....	x	....	....
3/16	.187	2.375	5.144	....	x	....	....
7/32	.219	2.312	5.920	....	x	....	....
¼	.250	2.250	6.675	x	x	....	x
9/32	.281	2.188	7.410	x	x	....	....
5/16	.313	2.125	8.147	....	x	....	....
11/32	.344	2.062	8.839	....	x	....	....
⅜	.375	2.000	9.512	x	x	....	....
7/16	.437	1.875	10.820	x	....	....	....
½	.500	1.750	12.020	x	....	....	....
9/16	.563	1.625	13.150	x	....	....	....
⅝	.625	1.500	14.180	x	....	....	....
11/16	.688	1.374	15.150	x	....	....	....
¾	.750	1.250	16.020	x	....	....	....
⅞	.875	1.000	17.520	x	....	....	....
1	1.000	.750	18.690	x	....	....	....
2⅞ x							
16	.065	2.745	1.951	....	x	x	....
11	.120	2.635	3.531	....	x	x	....
⅛	.125	2.625	3.671	....	x	....	....
5/32	.156	2.563	4.530	....	x	....	....
7	.180	2.515	5.181	....	....	x	x
3/16	.187	2.500	5.395	....	x	....	....
7/32	.219	2.437	6.212	....	x	....	x
¼	.250	2.375	7.009	....	x	....	x
9/32	.281	2.313	7.785	....	x	....	x
5/16	.313	2.250	8.564	....	x	....	....
⅜	.375	2.125	10.010	x	x	....	....
7/16	.438	2.001	11.400	x	....	....	....
½	.500	1.875	12.680	x	....	....	....
9/16	.563	1.751	13.900	x	....	....	....
⅝	.625	1.625	15.020	x	....	....	....
¾	.750	1.375	17.020	x	....	....	....
3 x							
18	.049	2.902	1.544	....	....	x	....
16	.065	2.870	2.037	....	x	x	....
14	.083	2.834	2.586	....	x	x	....
13	.095	2.810	2.947	....	x	x	....
12	.109	2.782	3.365	....	x	x	....
11	.120	2.760	3.691	....	x	x	x
⅛	.125	2.750	3.838	....	x	....	....
10	.134	2.732	4.102	....	x	x	....
5/32	.156	2.687	4.738	....	x	....	....
7	.180	2.640	5.421	....	....	x	....
3/16	.187	2.625	5.646	....	x	x	x
7/32	.219	2.562	6.505	....	x	....	x
¼	.250	2.500	7.343	x	x	x	x
9/32	.281	2.437	8.160	x2	x	....	....
5/16	.313	2.375	8.982	x	x	....	x
11/32	.344	2.312	9.758	x	....	....	....
⅜	.375	2.250	10.510	x	....	....	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED ELECTRIC WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
3 x						
7/16	.438	2.125	11.98	x	....	....
1/2	.500	2.000	13.35	x	....	....
9/16	.563	1.875	14.65	x	....	....
5/8	.625	1.750	15.85	x	....	....
11/16	.688	1.625	16.99	x	....	....
3/4	.750	1.500	18.02	x	....	...
7/8	.875	1.250	19.860	x	....	....
1	1.000	1.000	21.360	x	....	....
3 1/16 x						
1/4	.250	2.563	7.511	....	x	....
5/16	.313	2.437	9.193	....	x	....
3/8	.375	2.313	10.770	....	x	....
3 1/8 x						
16	.065	2.995	21.24	....	x	x
13	.095	2.935	3.074	....	....	x
11	.120	2.885	3.851	....	x	x
1/8	.125	2.875	4.005	....	x	....
3/16	.187	2.750	5.897	....	x	....
7/32	.219	2.687	6.797	....	x	....
1/4	.250	2.625	7.676	....	x	....
5/16	.313	2.500	9.400	....	x	....
3/8	.375	2.375	11.010	x	x	....
7/16	.438	2.250	12.570	x	....	....
1/2	.500	2.125	14.020	x	....	....
9/16	.563	2.000	15.400	x	....	....
5/8	.625	1.875	16.690	x	....	....
3/4	.750	1.625	19.020	x	....	....
7/8	.875	1.375	21.030	x	....	....
3 1/4 x						
16	.065	3.120	2.211	....	x	x
13	.095	3.060	3.201	....	x	x
11	.120	3.010	4.010	....	x	x
1/8	.125	3.000	4.172	....	x	....
10	.134	2.982	4.459	....	x	....
5/32	.156	2.937	5.155	x	x	....
3/16	.187	2.875	6.148	....	x	....
7/32	.219	2.812	7.089	....	x	....
1/4	.250	2.750	8.010	....	x	....
9/32	.281	2.688	8.910	....	x	....
5/16	.313	2.625	9.818	x	x	....
3/8	.375	2.500	11.510	x	x	....
7/16	.438	2.376	13.150	x	....	....
1/2	.500	2.250	14.690	x	....	....
9/16	.563	2.126	16.150	x	....	....
5/8	.625	2.000	17.520	x	....	....
3/4	.750	1.750	20.030	x	....	....
7/8	.875	1.500	22.190	x	....	....
1	1.000	1.250	24.030	x	....	....
3 3/8 x						
11	.120	3.135	4.172	....	x	....

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED ELECTRIC WELDED

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
3 3/8 x						
1/8	.125	3.125	4.339	....	x	....
3/16	.187	3.000	6.399	x	x	....
1/4	.250	2.875	8.344	x	x	....
5/16	.313	2.750	10.240	x	x	....
3/8	.375	2.625	12.020	x	....	....
7/16	.438	2.501	13.740	x	....	...
1/2	.500	2.375	15.350	x	....	....
9/16	.563	2.249	16.910	x	....	....
5/8	.625	2.125	18.360	x	....	....
3/4	.750	1.875	21.030	x	....	....
3 1/2 x						
16	.065	3.370	2.385	x	x	x
14	.083	3.334	3.029	x	....	x
13	.095	3.310	3.455	x	x	x
11	.120	3.260	4.332	x	x	x
1/8	.125	3.250	4.506	....	x	....
10	.134	3.232	4.817	x	x	x
5/32	.156	3.188	5.571	x	x	....
7	.180	3.140	6.382	....	....	x
3/16	.187	3.125	6.650	x	x	....
7/32	.219	3.062	7.674	x	x	....
1/4	.250	3.000	8.678	x	x	x
9/32	.281	2.938	9.660	x	....	....
5/16	.313	2.875	10.650	x	x	....
3/8	.375	2.750	12.520	x	....	....
7/16	.428	2.626	14.320	x	....	....
1/2	.500	2.500	16.020	x	....	....
.515	.515	2.470	16.420	x	....	....
9/16	.563	2.374	17.660	x	....	....
5/8	.625	2.250	19.190	x	....	....
3/4	.750	2.000	22.030	x	....	....
7/8	.875	1.750	24.530	x	....	....
1	1.000	1.500	26.700	x	....	....
3 5/8 x						
16	.065	3.495	2.471	....	....	x
11	.120	3.385	4.492	x	....	....
3/16	.187	3.250	6.901	x	x	....
1/4	.250	3.125	9.011	x	x	....
5/16	.313	3.000	11.070	x	x	....
3/8	.375	2.875	13.020	x	....	....
7/16	.438	2.750	14.910	x	....	....
1/2	.500	2.625	16.690	x	....	....
9/16	.563	2.499	18.410	x	....	....
5/8	.625	2.375	20.030	x	....	....
3/4	.750	2.125	23.030	x	....	....
3 3/4 x						
16	.065	3.620	2.558	x	x	x
13	.095	3.560	3.708	x	....	x
11	.120	3.510	4.652	x	....	x
1/8	.125	3.500	4.839	....	x	....
10	.134	3.482	5.175	x	....	x
5/32	.156	3.437	5.988	x	....	x
7	.180	3.390	6.863	....	....	x

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED ELECTRIC WELDED

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
(continued from preceding page)						
3¾ x						
3/16	.187	3.375	7.152	....	x	....
1/4	.250	3.250	9.345	....	x	....
5/16	.313	3.125	11.490	....	x	....
3/8	.375	3.000	13.520	....	x	....
7/16	.438	2.875	15.490	x	....	....
1/2	.500	2.750	17.360	x	....	...
9/16	.563	2.624	19.160	x	....	....
5/8	.625	2.500	20.860	x	....	....
3/4	.750	2.250	24.030	x	....	....
3⅞ x						
1/8	.125	3.625	5.006	....	x	....
3/16	.187	3.500	7.403	....	x	....
1/4	.250	3.375	9.679	....	x	....
5/16	.313	3.249	11.910	....	x	....
3/8	.375	3.125	14.020	....	x	....
7/16	.438	3.000	16.080	x	....	....
1/2	.500	2.875	18.020	x	....	....
9/16	.563	2.750	19.910	x	....	....
5/8	.625	2.625	21.690	x	....	....
3/4	.750	2.375	25.030	x	....	....
4 x						
18	.049	3.902	2.068	....	....	x
16	.065	3.870	2.732	....	....	x
14	.083	3.834	3.472	....	x	x
13	.095	3.810	3.962	....	x	x
12	.109	3.782	4.530	....	x	x
11	.120	3.760	4.973	....	x	x
1/8	.125	3.750	5.173	....	x	....
10	.134	3.732	5.533	....	x	x
5/32	.156	3.687	6.404	x	x	...
7	.180	3.640	7.344	...	....	x
3/16	.187	3.625	7.654	....	x	....
7/32	.219	3.562	8.843	x	x	x
1/4	.250	3.500	10.010	x	x	x
9/32	.281	3.438	11.160	....	x	....
5/16	.313	3.375	12.330	....	x	....
3/8	.375	3.250	14.520	x	x	....
7/16	.438	3.126	16.660	....	x	....
1/2	.500	3.000	18.690	x	x	....
9/16	.563	2.875	20.670	....	x	....
5/8	.625	2.750	22.530	x	....	....
3/4	.750	2.500	26.030	x	....	....
7/8	.875	2.250	29.200	x	....	....
1	1.000	2.000	32.040	x	....	....
1¼	1.250	1.500	36.710	*x	....	....
4⅛ x						
11	.120	3.885	5.133	x	....	....

*Also Carried in Hot Rolled

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED ELECTRIC WELDED

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
(continued from preceding page)						
4⅛ x						
3/16	.187	3.751	7.905	....	x	....
1/4	.250	3.625	10.350	x	x	....
5/16	.313	3.500	12.740	....	x	....
3/8	.375	3.375	15.020	....	x	....
1/2	.500	3.125	19.360	....	x	....
9/16	.563	2.999	21.420	....	x	...
5/8	.625	2.875	23.360	x	....	....
4¼ x						
16	.065	4.120	2.905	....	....	x
13	.095	4.060	4.216	....	x	x
11	.120	4.010	5.293	x	x	x
1/8	.125	4.000	5.507	....	x	....
10	.134	3.982	5.890	....	x	....
3/16	.187	3.875	8.156	....	x	...
1/4	.250	3.750	10.680	x	x	....
5/16	.313	3.625	13.160	....	x	....
3/8	.375	3.500	15.520	....	x	....
7/16	.438	3.375	17.820	....	x	....
1/2	.500	3.250	20.030	....	x	....
9/16	.563	3.124	22.170	x	....	....
5/8	.625	3.000	24.200	x	....	....
11/16	.688	2.874	26.170	x	....	....
3/4	.750	2.750	28.040	x	....	....
7/8	.875	2.500	31.540	x	....	....
1	1.000	2.250	34.710	x	....	....
1⅛	1.125	2.000	37.550	*x	....	....
1¼	1.250	1.750	40.050	*x	....	....
4⅜ x						
3/16	.187	4.001	8.407	....	x	....
1/4	.250	3.875	11.010	....	x	....
5/16	.313	3.749	13.580	....	x	....
3/8	.375	3.625	16.020	....	x	....
7/16	.438	3.500	18.420	....	x	....
1/2	.500	3.375	20.690	....	x	....
5/8	.625	3.125	25.030	x	....	....
3/4	.750	2.875	29.040	x	....	....
4½ x						
16	.065	4.370	3.079	....	....	x
14	.083	4.334	3.915	....	....	x
13	.095	4.310	4.469	....	x	x
11	.120	4.260	5.613	....	x	x
1/8	.125	4.250	5.841	....	x	....
10	.134	4.232	6.248	....	x	x
5/32	.156	4.188	7.237	....	x	....
7	.180	4.140	8.305	....	....	x
3/16	.187	4.125	8.658	....	x	....
7/32	.219	4.062	10.010	....	x	....
1/4	.250	4.000	11.350	x	x	x
5/16	.313	3.875	14.000	....	x	....
3/8	.375	3.750	16.520	x	x	....
7/16	.438	3.624	19.000	x	x	....
1/2	.500	3.500	21.360	x	x	....
9/16	.563	3.375	23.670	x	x	....

*Also Carried in Hot Rolled

(continued on following page)

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
4½ x						
⅝	.625	3.250	25.870	x	....	....
¾	.750	3.000	30.040	x	....	....
⅞	.875	2.750	33.880	x	....	....
1	1.000	2.500	37.380	x	....	....
1⅛	1.125	2.250	40.550	* x	....	....
1¼	1.250	2.000	43.390	* x	....	...
1½	1.500	1.500	48.060	** x	....	....
4⅝ x						
3/16	.187	4.251	8.909	....	x	....
¼	.250	4.125	11.680	....	x	....
5/16	.313	3.999	14.410	....	x	....
⅜	.375	3.875	17.020	....	x	....
½	.500	3.625	22.030	x	x	....
⅝	.625	3.375	26.700	x	....	....
¾	.750	3.125	31.040	x	....	....
4¾ x						
16	.065	4.620	3.252	....	....	x
11	.120	4.510	5.934	....	....	x
⅛	.125	4.500	6.174	....	x	....
3/16	.187	4.376	9.160	....	x	....
¼	.250	4.250	12.020	....	x	....
5/16	.313	4.125	14.830	....	x	....
⅜	.375	4.000	17.520	....	x	....
7/16	.438	3.874	20.170	....	x	....
½	.500	3.750	22.700	x	x	....
9/16	.563	3.624	25.180	x	....	....
⅝	.625	3.500	27.530	x	....	....
¾	.750	3.250	32.040	x	....	....
⅞	.875	3.000	36.210	x	....	....
1	1.000	2.750	40.050	x	....	...
1¼	1.250	2.250	46.730	x	....	....
4⅞ x						
3/16	.188	4.499	9.411	....	x	....
¼	.250	4.375	12.350	....	x	....
⅜	.375	4.125	18.020	....	x	....
7/16	.438	3.999	20.760	x	....	....
½	.500	3.875	23.360	x	....	....
¾	.750	3.375	33.040	x	....	....
5 x						
16	.065	4.870	3.426	....	....	x
14	.083	4.834	4.359	....	....	x
11	.120	4.760	6.254	....	x	x
⅛	.125	4.750	6.508	....	x	....
5/32	.156	4.687	8.070	....	x	....
7	.180	4.640	9.266	....	x	x
3/16	.187	4.624	9.662	....	x	....
¼	.250	4.500	12.680	x	x	x
5/16	.313	4.375	15.670	....	x	....
⅜	.375	4.250	18.520	x	....	....
7/16	.438	4.124	21.340	x	....	....
½	.500	4.000	24.030	x	....	....
9/16	.563	3.876	26.680	x	....	....
⅝	.625	3.750	29.200	x	....	....
¾	.750	3.500	34.040	x	....	....

*Also Carried in Hot Rolled
**Carried in Hot Rolled Only

(continued on following page)

(continued from preceding page)

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
5 x						
⅞	.875	3.250	38.550	x	....	....
1	1.000	3.000	42.720	x	....	....
1¼	1.250	2.500	50.060	*x	....	....
1½	1.500	2.000	56.070	**x	....	....
5⅛ x						
5/16	.313	4.501	16.090	x	x	...
⅜	.375	4.375	19.020	x	x	....
½	.500	4.125	24.700	x	x	....
⅝	.625	3.875	30.040	x	....	....
1	1.000	3.125	44.060	x	....	....
5¼ x						
11	.120	5.010	6.575	....	x	....
⅛	.125	5.000	6.842	....	x	....
3/16	.187	4.875	10.160	....	x	...
¼	.250	4.750	13.350	....	x	....
5/16	.313	4.625	16.500	....	x	....
⅜	.375	4.500	19.520	....	x	....
½	.500	4.250	25.370	x	x	....
⅝	.625	4.000	30.870	x	....	....
¾	.750	3.750	36.050	x	....	....
⅞	.875	3.500	40.880	x	....	....
1	1.000	3.250	45.390	x	....	....
1¼	1.250	2.750	53.400	x	....	....
5⅜ x						
3/16	.188	5.000	10.410	....	x	....
½	.500	4.375	26.030	....	x	....
5½ x						
16	.065	5.370	3.773	....	....	x
11	.120	5.260	6.895	....	....	x
⅛	.125	5.250	7.176	....	x	....
3/16	.187	5.125	10.670	....	x	....
¼	.250	5.000	14.020	x	x	x
5/16	.313	4.875	17.340	....	x	....
⅜	.375	4.750	20.530	....	x	....
7/16	.438	4.624	23.680	....	x	....
½	.500	4.500	26.700	x	x	....
⅝	.625	4.250	32.540	x	....	....
¾	.750	4.000	38.050	x	....	....
⅞	.875	3.750	43.220	x	....	....
1	1.000	3.500	48.060	x	....	...
1¼	1.250	3.000	56.750	*x	....	...
1½	1.500	2.500	64.080	**x	....	....
5⅝ x						
5/16	.313	5.001	17.760	....	x	....
⅜	.375	4.875	21.030	x	x	....
½	.500	4.623	27.370	x	....	....
⅝	.625	4.375	33.380	x	....	....
5¾ x						
⅛	.125	5.500	7.510	....	x	....
3/16	.187	5.375	11.170	....	x	....
¼	.250	5.250	14.690	....	x	....
5/16	.313	5.125	18.180	....	x	....
⅜	.375	5.000	21.530	....	x	....

*Also Carried in Hot Rolled
**Carried in Hot Rolled Only

(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED ELECTRIC WELDED

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
(continued from preceding page)						
5¾ x						
½	.500	4.700	28.040	x	x	....
⅝	.625	4.500	34.210	x	....	....
¾	.750	4.250	40.050	x	....	....
⅞	.875	4.000	45.560	x	....	....
1	1.000	3.750	50.730	x	....	....
6 x						
16	.065	5.870	4.120	...	....	x
11	.120	5.760	7.536	....	x	x
⅛	.125	5.750	7.843	....	x	....
10	.134	5.732	8.395	....	....	x
7	.180	5.640	11.190	....	....	x
3/16	.187	5.625	11.670	....	x	....
¼	.250	5.500	15.350	....	x	x
5/16	.313	5.374	19.010	....	x	....
⅜	.375	5.250	22.530	x	x	....
7/16	.438	5.125	26.020	....	x	....
½	.500	5.000	29.370	x	x	....
9/16	.562	4.876	32.690	x	....	....
⅝	.625	4.750	35.880	x	....	....
¾	.750	4.500	42.050	x	....	....
⅞	.875	4.250	47.890	x	....	....
1	1.000	4.000	53.400	x	....	....
1¼	1.250	3.500	63.410	*x	....	....
1½	1.500	3.000	72.090	**x	....	....
6¼ x						
11	.120	6.010	7.856	....	x	....
⅛	.125	6.000	8.18	....	x	....
3/16	.187	5.876	12.170	....	x	....
¼	.250	5.750	16.020	....	x	....
⅜	.375	5.500	23.530	x	x	...
½	.500	5.250	30.710	x	x	....
⅝	.625	5.000	37.550	x	....	
¾	.750	4.750	44.060	x	....	....
⅞	.875	4.500	50.230	x	....	....
1	1.000	4.250	56.070	x	....	....
6½ x						
10	.134	6.232	9.111	....	x	....
3/16	.188	6.124	12.670	....	x	....
¼	.250	6.000	16.690	....	x	....
⅜	.375	5.750	24.530	x	x	....
½	.500	5.500	32.040	x	x	....
⅝	.625	5.250	39.220	x	....	....
¾	.750	5.000	46.060	x	....	....
⅞	.875	4.750	52.570	x	....	....
1	1.000	4.500	58.740	x	....	....
1¼	1.250	4.000	70.090	*x	....	....
1½	1.500	3.500	80.100	**x	....	....
6⅝ x						
¼	.250	6.125	17.020	....	x	....
5/16	.313	5.999	21.100	....	x	....
6⅝ x						
¼	.250	6.250	17.360	....	x	....
⅜	.375	6.000	25.530	....	x	....
½	.500	5.750	33.380	x	x	....
⅝	.625	5.500	40.880	x	....	....

*Also carried in Hot Rolled
**Carried in Hot Rolled Only
(continued on following page)

ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS DOM WELDED ELECTRIC WELDED

O.D. & Ga.	Wall Dec.	I.D.	Wt. per Ft. Lbs.	C.D. Seamless	DOM Welded	Electric Welded
(continued from preceding page)						
6¾ x						
¾	.750	5.250	48.060	x	....	....
⅞	.875	5.000	54.900	x	....	....
1	1.000	4.750	61.410	x	....	....
7 x						
3/16	.187	6.625	13.680	...	x	x
¼	.250	6.500	18.020	...	x	....
⅜	.375	6.250	26.530	x	x	....
½	.500	6.000	34.710	x	x	....
⅝	.625	5.750	42.550	x	....	....
¾	.750	5.500	50.060	x	....	
1	1.000	5.000	64.080	x	....	....
1¼	1.250	4.500	76.760	*x	....	....
1½	1.500	4.000	88.110	**x	....	...
7¼ x						
3/16	.187	6.875	14.18	....	x	....
¼	.250	6.750	18.690	....	x	....
⅜	.375	6.500	27.530	x	x	....
½	.500	6.250	36.050	x	....	....
⅝	.625	6.000	44.220	x	....	....
¾	.750	5.750	52.070	x	....	....
⅞	.875	5.500	59.570	x	....	....
1	1.000	5.250	66.750	x	....	....
7½ x						
¼	.250	7.000	19.360	x	x	....
⅜	.375	6.750	28.540	x	x	....
½	.500	6.500	37.380	x	x	....
⅝	.625	6.250	45.890	x	....	....
¾	.750	6.000	54.070	*x	....	....
1	1.000	5.500	69.420	*x	....	....
1¼	1.250	5.000	83.440	*x	....	....
1½	1.500	4.500	96.120	**x	....	....
7¾ x						
¼	.250	7.250	20.030	....	x	....
⅜	.375	7.000	29.540	X	x	....
½	.500	6.750	38.720	x	x	....
⅝	.625	6.500	47.560	x	x	....
¾	.750	6.250	56.070	*x	x	....
1	1.000	5.750	72.090	x	....	....
8 x						
¼	.250	7.500	20.690	x	x	x
⅜	.375	7.250	30.540	x	x	....
½	.500	7.000	40.050	x	x	
⅝	.625	6.750	49.230	x	....	....
¾	.750	6.500	58.070	*x	....	....
1	1.000	6.000	74.760	*x	....	....
1⅛	1.125	5.750	82.600	x	....	....
1¼	1.250	5.500	90.110	*x	....	....
1½	1.500	5.000	104.100	**x	....	....
8¼ x						
¼	.250	7.750	21.360	....	x	....
⅜	.375	7.500	31.540	x	x	....
½	.500	7.250	41.390	x	x	....

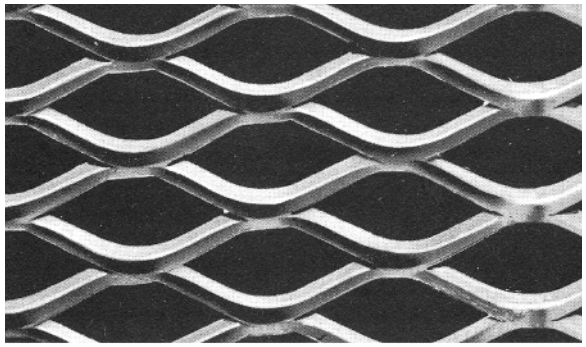
*Also carried in Hot Rolled
**Carried in Hot Rolled Only
(continued on following page)

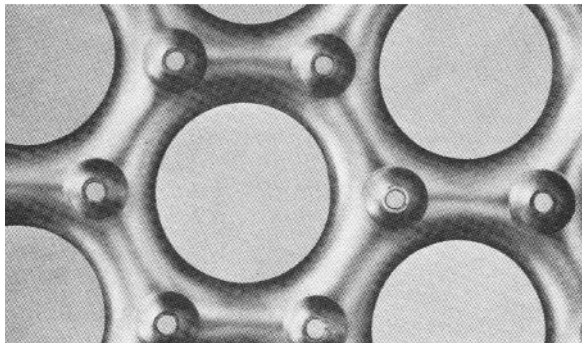
ROUND MECHANICAL TUBE

COLD DRAWN SEAMLESS

O.D. & Ga.	I.D.	Wt. per Ft. Lbs.
(continued from preceding page)		
8¼ x		
*¾	6.750	60.08
*1	6.250	77.43
8½ x		
# ¼	8.000	22.03
# ⅜	7.750	32.54
# ½	7.500	42.72
# ¾	7.000	62.08
*1	6.500	80.10
*1¼	6.000	96.79
**1½	5.500	112.10
8¾ x		
#⅜	8.000	33.54
#½	7.750	44.06
#¾	7.250	64.08
*1	6.750	82.77
**1	5.750	116.10
9 x		
# ¼	8.500	23.36
# ⅜	8.250	34.54
# ½	8.000	45.39
* ¾	7.500	66.08
*1	7.000	85.44
**1¼	6.500	103.50
**1½	6.000	120.20
**2	5.000	149.50
9¼ x		
#½	8.250	46.73
¾	7.750	68.09
1	7.250	88.11
9½ x		
# ¼	9.000	24.70
#⅜	8.750	36.55
#½	8.500	48.06
⅝	8.250	59.24
*¾	8.000	70.09
*1	7.500	90.78
*1⅛	7.250	100.60
*1¼	7.000	110.10
**1½	6.500	128.20
**2	5.500	160.20
9⅝ x		
**½	8.625	48.73
¾	8.125	71.09
9¾ x		
# ¼	9.250	25.37
#⅜	9.000	37.55
#½	8.750	49.40
*¾	8.250	72.09
1	7.750	93.45
10 x		
# ¼	9.500	26.03
#⅜	9.250	38.55
#½	9.000	50.73
*¾	8.500	74.09
10 x		
*1	8.000	96.12
*1	7.750	106.60
*1¼	7.500	116.80
**1½	7.000	136.20
**2	6.000	170.90
10½ x		
# ¼	10.000	27.37
# ½	9.500	53.40
* ¾	9.000	78.10
*1	8.500	101.50
**1¼	8.000	123.50
**1½	7.500	144.20
10¾ x		
½	9.750	54.74
¾	9.250	80.10
*1	8.750	104.10
**1⅛	8.500	115.60
**1¼	8.250	126.80
**1½	7.750	148.20
11 x		
# ½	10.000	56.07
* ¾	9.500	82.10
*1	9.000	106.80
**2	7.000	192.20
11¼ x		
½	10.250	57.41
** ¾	9.750	84.11
11½ x		
¾	10.000	86.11
1	9.500	112.10
**1½	8.500	160.20
11¾ x		
** ½	10.750	60.80
* ¾	10.250	88.11
*1	9.750	114.80
12 x		
¼	11.500	31.37
#* ⅜	11.250	46.56
#* ½	11.000	61.41
¾	10.500	90.11
*1	10.000	117.50
**1¼	9.500	143.50
**1½	9.000	168.20
**2	8.000	213.60
12¼ x		
½	11.250	64.08
⅝	11.000	77.60
¾	10.750	94.12

*Also carried in Hot Rolled
**Carried in Hot Rolled Only
#Also available as DOM Welded





GRATING & EXPANDED METAL

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–your “Service Center” for all types of expanded metal & grating – to meet safety requirements and production needs.

BANDING	PAINTING
FORMING	SAWING
GALVANIZING	SHEARING
NOTCHING	WELDING

Stair treads and handrail for walkaway.

EXPANDED METAL AND GRATING PRODUCTS

BAR GRATING

BAR GRATING: This product is an open grid of metal bars composed of Bearing Bars held in place by Cross Bars. The bars are welded, forged, or mechanically locked in place. Bar Grating is available plain, painted, galvanized, or vinyl coated; the bearing bars are available with either plain or serrated edges; the cross bars are available either smooth or spiral drawn. Applications include walkways, fire escapes, floors, decks, stair treads. Bar Grating conforms to federal specifications RR-G-66lb and MIL-G-18014. Other Bar Grating products available are: Heavy Duty Steel Grating – a welded grating product designed for heavier load bearing areas such as truck or fork lift traffic; Aluminum Grating – a light weight, non-sparking corrosion resistant product for refineries, sewer and water plants, and light-weight structures.

EXPANDED METAL

EXPANDED METAL: This material is a sheet product which is pierced in rows of parallel slits; these slits are then expanded to form the characteristic diamond openings. While the sheet may expand up to ten times its original size and lose up to 80% of its weight, the Expanded Metal sheet is stronger and more rigid than the original sheet. Expanded Metal is available in two types – Standard and Flattened. Standard Expanded Metal is the more popular type and is used for machine guards, safety cages, protective enclosures, divider screens, window guards and stair treads. Flattened Expanded Metal is a more functional or decorative product used for trays, bins, shelving, grills and baskets requiring a flat smooth surface. Wherever there is a need to enclose or protect, yet still allow light and air, Expanded Metal has an application.

EXPANDED METAL GRATING: This product is similar in manufacture and pattern design to Expanded Metal; however, the grating is manufactured from light gauge plate. Therefore, Expanded Metal Grating can be used for load bearing applicatoins such as catwalks, walkways, platforms and stair treads. Please inquire for load specifications.

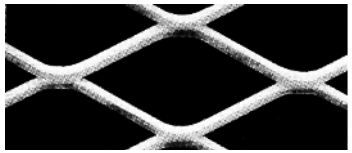
SAFETY GRATING

DECK SPAN: This material is a sheet product which is stamped and formed; a single piece of steel forms the diamond matrix, serrated surface, and side channels. This one-piece, plank type grating, with its open diamond matrix pattern, provides firm, slip free footing in all directions. Applications include: platforms, work stations, steps, stair treads, walkways and catwalks. Slip resistance conforms to federal specifications RR-G-1602. Please inquire for load specifications.

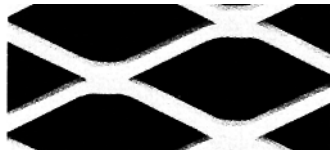
MORTON OPEN GRIP®: This material is a stamped and formed sheet product with a unique pattern of raised, perforated buttons and 1⅜” debossed holes. This one-piece sheet metal grating is widely used by industry for work platforms, mezzanines, catwalks, stair treads – wherever safe, comfortable footing on an open flooring is important. Other related Morton products are Walkway and Toeboard Channels, Tread Grip Safety Flooring, Stair Treads and Ladder Rungs. Slip resistance conforms to federal specifications RR-G-1602A. The perforated buttons on the Tread Grip Flooring, Open Grip Channels, and Stair Treads meet OSHA requirements.

EXPANDED METAL

STANDARE/NON-FLATTENED



FLATTENED



Standard (Non-Flattened) Expanded Metal – With this type, the pierced strands are turned at a sharp angle to the plane of the sheet; this configuration makes the Expanded Metal stronger and more rigid than the original solid sheet, even though lighter in weight; this configuration also allows maximum air circulation and visibility through the mesh.

Standard Stock Sizes:

Style Designation	Wt. in Lbs. per Sq. Ft.	Standard Sizes in Feet Widths-Lengths SWO		LWO	Size of Opening in Inches Widths-Lengths SWD	LWD
¼" -20	.86	3-4	X	8	9/64	23/32
¼" -20	1.14	3-4	X	8	9/64	23/32
½" -20	.43	3-4	X	8	7/16	15/16
½" -18	.70	3-4-6	X	8	7/16	15/16
½" -16	.86	3-4	X	8	3/8	15/16
½" -13	1.47	3-4	X	8	5/16	1 15/16
½" -16 Hy.	.54	3-4-6	X	8-10	13/16	1¾
¾" -13	.80	3-4-6	X	8-10-12	¾	1 11/16
¾" -10	1.20	3-4-6	X	8-10-12	¾	1⅝
¾" -9	1.80	3-4-6	X	8-10-12	11/16	1 9/16
1" -16	.44	4	X	8	1	2 1/16
1½" -16	.40	4	X	8	1¼	2⅝
1½" -13	.60	3-4-6	X	8-10-12	1 3/16	2½
1½" -10	.79	3-4-6	X	8-10-12	1 3/16	2½
1½" -9	1.20	3-4-6	X	8-10-12	1⅛	2⅜
1½" -6	2.50	3-4-6	X	8-10-12	1	2 9/16
2" -10	.68	3-4-6	X	8-10-12	1⅝	3 7/16
2" -9	.90	4	X	8-10-12	1 9/16	3⅜

Flattened Expanded Metal – With this type, a level surface is produced by passing Standard Expanded Sheets through rolls that flatten and smooth the strand and bridges. This flattened sheet is about two gauges thinner than the original sheet and the strands are wider than Standard Expanded Metal. With its smooth, flat surface, Flattened Expanded Metal is used for trays, bins, shelving, grills and baskets requiring a flat, smooth surface.

Standard Stock Sizes:

Style Designation	Weight in Lbs. per Sq. Ft.	Standard Sizes in Feet Widths-Lengths SWO		LWO	Size of Opening in Inches Widths-Lengths SWO	LWO
¼" -20-22	.83	3-4	X	8	3/32	11/16
¼" -18-20	1.11	3-4	X	8	3/32	11/16
½" -20-22	.40	3-4	X	8	3/8	1
½" -18-20	.66	3-4	X	8	9/32	1
½" -16-18	.82	3-4	X	8-10-12	¼	1
½" -13-15	1.40	3-4	X	8	¼	1
¾" -16-18 Hy	.51	3-4	X	8-10	¾	1¾
¾" -14-16	.63	3-4	X	8-10	11/16	1 13/16
¾" -13-15	.75	3-4	X	8-10-12	11/16	1 25/32
¾" - 9-11	1.71	3-4	X	8-10-12	9/16	1 11/16
1" -16-18	.41	4	X	8	1 1/16	2¼
1½" -16-18	.38	4	X	8	1 1/16	2¾
1½" -14-16	.46	3-4	X	8-10-12	1 1/16	2¾
1½" -13-15	.57	3-4	X	8	1 1/16	2¾
1½" - 9-11	1.14	3-4	X	8-10	1	2 9/16

NOTE: SWD – Short Way of Diamond LWD – Long Way of Diamond
SWO – Short Way of Opening LWO – Long Way of Opening
*These Figures may vary slightly with different manufacturers.

Expanded Metal Numbering System

Standard Type – The first number is the nominal width of the diamond in inches; the second number is the approximate gauge of the sheet, before expanding, except that No. 10 is expanded from approximately No. 13 gauge.

Flattened Type – The first number represents the nominal width of diamond in inches; the second number represents the approximate original gauge before flattening and the third number represents the approximate gauge thickness after flattening.

In addition to carbon steel, many sizes of Expanded Metal, both Standard and Flattened, are available in Aluminum and Stainless. Please Inquire.

DESIGN ADVANTAGE OF EXPANDED METAL:

- Allows free passage of light and air
- Easy to see through
- Can be cut to any configuration without losing its shape
- Can be bent and formed to many shapes and easily welded
- Attractive and clean in appearance

EXPANDED METAL GRATING

Standard Stock Sizes and Types:

Style Designation	Wt. in Lbs. per Sq. Ft.	Standard Sizes in Feet Widths-Lengths			Size of Opening in Inches Width	Length
Walkway	4.27	3-4	X	8-10	1	2⅞
Skywalk	3.14	4-6	X	10	1⅝	4⅞
3.0 lb. Grating	3.00	4-5-6	X	8-10-12	15/16	3 7/16
4.0 lb. Grating	4.00	4-5-6	X	8-10	15/16	3 7/16
5.0 lb. Grating	5.00	4-5-6	X	8-10	13/16	3⅜
6.25 lb. Grating	6.25	4-5-6	X	8-10	13/16	3⅜

DESIGN ADVANTAGE OF EXPANDED METAL:

- SLIP RESISTANCE – The ridges of the strands provide non-slip footing, and the open diamond pattern helps keep mud, grease, and snow from collecting on the surface.
- SAFE WORK AREA – While the diamond openings permit light and air to pass through, they are closely spaced to provide comfortable walking and to keep tools from falling through.
- ECONOMICAL – This type of grating is lower in cost than most other decking or grating products.

DECK SPAN SAFETY GRATING

Standard Stock Channels:

- Pre-galvanized steel – 14 and 12 gauge
- Hot Rolled,Pickled & Oiled Steel – 14 and 12 gauge
- Aluminum – 5052-H31– .080” and .100”
- Stainless – T-304-2B – 16 gauge

14 Gauge

Width Inches	Length Inches	Channel Height Inches	Steel Weight 120”	Steel Weight 144”
4¾	120 or 144	1½	23.0	27.6
7	120 or 144	1½	29.8	35.7
		2	31.5	37.8
		2½	34.4	41.3
9½	120 or 144	1½	35.6	42.8
		2	37.2	44.7
		2½	41.0	49.2
11¾	120 or 144	1½	41.2	49.4
		2	43.0	51.6
		2½	46.0	55.2
18¾	120 or 144	1½	60.8	73.0
		2	62.4	74.9
		2½	65.5	78.6
.080 Gauge Aluminum				
4¾	120 or 144	2	9.0	10.8
7	120 or 144	2	12.0	14.4
9½	120 or 144	2	14.0	16.8
11¾	120 or 144	2	16.0	19.2

12 Gauge

Width Inches	Length Inches	Channel Height Inches	Steel Weight 120”	Steel Weight 144”
4¾	120 or 144	1½	32.0	38.4
7	120 or 144	1½	40.0	48.0
		2	44.0	53.0
		2½	48.0	58.0
		3	51.0	61.0
9½	120 or 144	1½	49.0	58.8
		2	52.9	63.5
		2½	56.1	67.3
		3	60.0	72.0
11¾	120 or 144	1½	58.8	70.6
		2	61.7	74.0
		2½	65.7	78.8
		3	69.6	83.5
18¾	120 or 144	1½	84.2	101.0
		2	88.9	106.7
		2½	90.5	108.6
		3	95.2	114.2

Please inquire for load specifications.

DESIGN ADVANTAGES OF DECK SPAN GRATING

- SLIP RESISTANCE – the level surface provides more serrations in point-to-point contact for better gripping action; oil, grease, food stuffs and mud are pushed through the diamond openings, eliminating a hazardous buildup.
- LARGE OPEN AREA –the diamond openings permit free flow of air, heat, and light, this may eliminate the need for additional sprinklers under catwalks and platforms.
- EASY INSTALLATION -the plank-type configuration means easy handling in tight construction areas; the material can be cut with hand tools and easily fastened or welded in place.
- HIGH STRENGTH RATIO – the lightweight one piece construction develops very high load capacity per pound.
- MAINTENANCE AND ECONOMY – this material is low in initial cost, quickly installed and self-cleaning. The galvanized finish reduces maintenance and the plain finish is easily painted for low maintenance costs; the combination of high strength and low weight may result in structural steel savings.

MORTON OPEN GRIP® SAFETY GRATING

Standard Stock Channels:

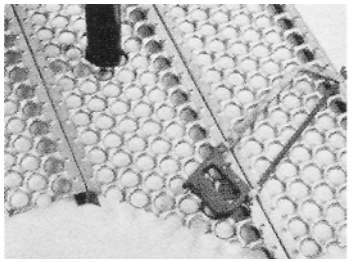
- G90 (ASTM-A-525) Pre-galvanized Steel (13 ga.)
- Hot Rolled, P & O Steel – (13 ga.)
- Aluminum 5052-H31 Mill Finish, .125” thick

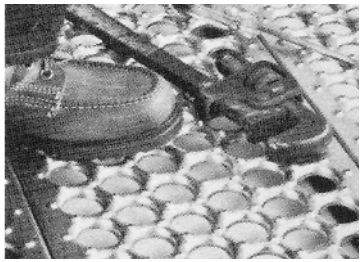
Width	Length	Channel Height	Steel Weight 120”	Steel Weight 144”
5”	120” or 144”	1½	25.6	30.7
		2	28.7	34.4
7”	120” or 144”	1½	32.5	39.0
		2	32.5	39.0
10”	120” or 144”	1½	40.2	48.2
		2	40.2	48.2
12”	120” or 144”	1½	44.0	52.8
		2	44.0	52.8
18”	120” or 144”	1½	56.3	67.6
		2	56.3	67.6

- 11 gauge steel (pre-galvanized or HRP&O) for heavier duty

18”	120”	2”	75.1	

*Tread-Grip channels are available in 7”, 10” and 12” (13 ga. steel and .125” aluminum) and 12” (11 ga. steel) in lengths of 10’ & 12’
Please inquire for load specifications.





DESIGN ADVANTAGE OF MORTON OPEN GRIP® SAFETY GRATING

- SLIP RESISTANCE – the circular edges of the perforated buttons grip from any direction: in fact, approximately 25 perforated buttons grip each foot at every step.
- LARGE OPEN AREA – depending upon size and shape,each grating panel has at least 50% open area; this allows light, air, and accumulated materials to pass through the grating.
- EASY INSTALLATION – one or two men can handle the channels and fit them in the field; the staggerd pattern permits field cut-outs and mitering without the need for edge banding; end margins permit close fit up for end-to-end tack welding.
- HIGH STRENGTH RATIO – the high strength-to-weight ratio minimizes support requirements.
- MAINTENANCE-FREE LIFE – these panels have no corners to catch mud and grease; the big, round-edged holes are self-cleaning, and the galvanized finish resists corrosion.
- LONG EFFECTIVE LIFE – these panels retain a higher percentage of their original anti-slip characteristics for a longer time than any other grating.
- COMFORT AND SAFETY – these panels will not abrade hands or knees or tear clothing; the button and hole design permit kneeling or sitting on the panel surface during installation or a work schedule.

MORTON TREAD GRIP® SAFETY FLOORING

Description: Floor Tread is a sheet product that has been stamped to produce a series of closely spaced perforated buttons embossed on the top side of the sheet.

Application: Floor Tread is most frequently used over existing flooring and for indoor applications – but it is sometimes installed with only perimeter support and often used where exposed to weather. Many original equipment manufacturers specify Tread Grip for steps and walking areas. Please inquire for load specifications.

Stock Sizes:

Hot Rolled, Pickled and Oiled: 11, 13 and 16 gauge

Galvanized: special inquiry.

Aluminum 5052-H31: .125" thick.

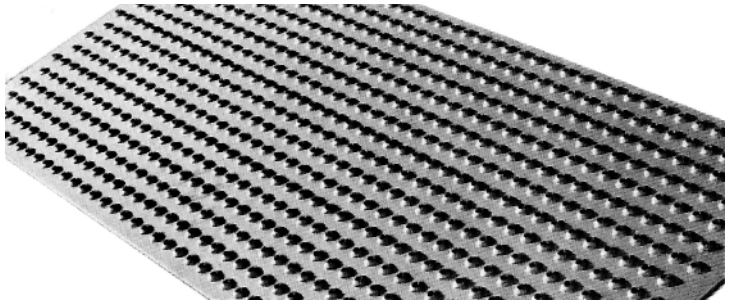
Stainless T-304-2B: 16 gauge

Sheet size 36" x 120"

Weight per square foot in pounds:

16 ga., 2.4; 13 ga., 3.6; 11 ga., 4.8; .125 aluminum, 1.7

Tread-Grip channels are also available.



DESIGN ADVANTAGES OF MORTON TREAD GRIP® FLOOR TREAD

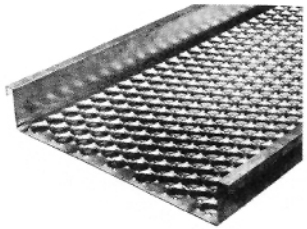
- HIGH ADHESIVE FRICTION – no matter which way you move across it your boot contacts the "gripping" edges of about 100 button at every step and the tread is directionless – it works as well one way as another.
- LONG SERVICE LIFE – the gripping edges are not reduced or blunted by ordinary wear.
- ADAPTABILITY TO A WIDE RANGE OF APPLICATIONS – such as ramps, stairways, walkways, trench covers, ladders, loading docks and equipment platforms. There are no toe stubbing projections.The perforations drain spillage and break oil film from the gripping edges.

SPECIAL MORTON PRODUCTS

OPEN-GRIP® WALKWAY CHANNELS

STOCK SIZES:
- G90 Pre-galvanized Steel
  13 ga. x 24" and 30"
  11 ga. x 24", 30" and 36"

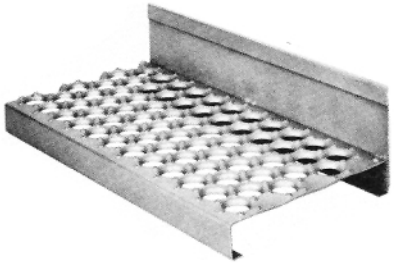
Other gauges, widths, lengths and heights available on special order.



OPEN-GRIP® TOEBOARD CHANNELS

Also available in Tread Grip pattern

STOCK SIZES:
- G90 Pre-galvanized 13 Ga. steel toe-plates.120" or 144" lengths, are welded to any stocked Open-Grip channel.
- Standard Lengths 120", 144"



OPEN-GRIP® STANDARD STOCK STAIR TREADS

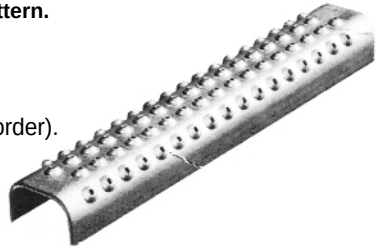
Also available in Tread Grip pattern

G90 (ASTM-A-525) Pre-galvanized Steel (13 Ga)
24" wide x 10" x 2" high
30" wide x 10" x 2" high
36" wide x 10" x 2" high
48" wide x 10" x 2" high
- Margins all sides
- No rough edges
- Integral end caps
- Pattern interrupted

TREAD-GRIP® LADDER RUNGS
4 ROW TYPE STOCK LADDER RUNGS

Also available in 2 row and 3 row pattern.

MATERIAL
13 gauge HRP&O steel and
.125" 5052-H31 aluminum
(11 gauge steel available on special order).
2¼" wide x 48¾" long, or
cut to specification.
End notching for pipe fit up
available on request.

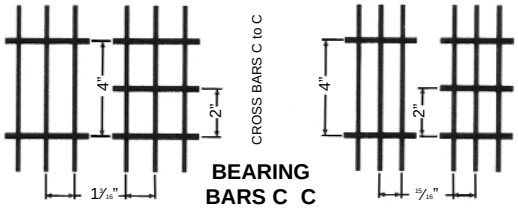


Refer to office for load specifications.

BAR GRATING

STANDARD MESH TYPES TYPE 19-W-4 TYPE 19-W-2

CLOSE MESH TYPES TYPE 15-W-4 TYPE 15-W-2



BEARING BARS C C

Maximum Width of Pnels 3'0"

Conforms to Federal Specifications RR-G-661B and MIL-G-18014
Standard Stock Sizes and Types:

WEIGHT IN LBS. PER SQ. FT.

Bearing Bars	Type 19-W--4	Type 19-W-2	Type 15-W-4	Type 15-W-2
¾ x ⅛	4.00	4.63	4.95	5.59
¾ x 3/16	5.67	6.31	7.11	7.75
1 x ⅛	5.15	5.79	6.44	7.08
1 x 3/16	7.35	7.99	9.27	9.91
1¼ x ⅛	6.20	6.84	7.79	8.43
1¼ x 3/16	9.03	9.67	11.43	12.07
1½ x ⅛	7.35	7.99	9.27	9.91
1½ x 3/16	10.94	11.80	13.82	14.68
1¾ x 3/16	12.62	13.48	15.98	16.84
2 x 3/16	14.30	15.16	18.14	19.00
2¼ x 3/16	15.87	16.74	20.16	21.03
2½ x 3/16	17.55	18.42	22.32	23.19

STOCK SIZES

Type	Width in In.	Length in In.	Type	Width in In.	Length in In.
19W	24, 36	240	15W	24, 36	240

WHEN ORDERING GRATING, SPECIFY:

1. Type
2. Size of bearing bars – depth and width
3. Span (direction of bearing bars)
4. Dimensions of area to be covered
5. Surface – Painted or Galvanized – Smooth orSerrated

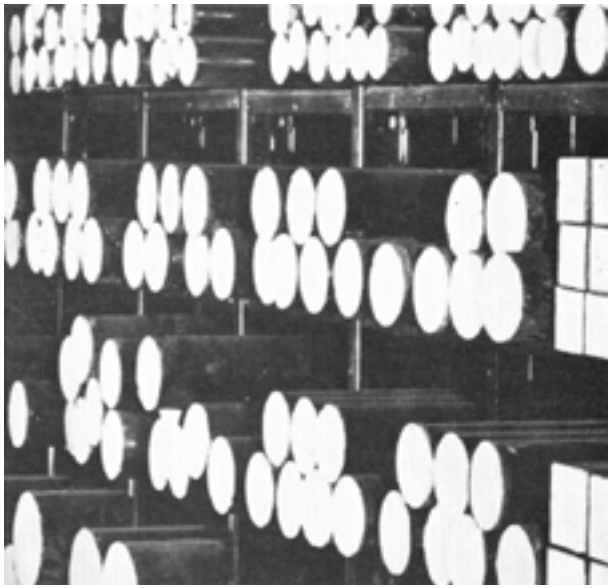
DESIGN ADVANTAGES OF BAR GRATING

- DESIGN AND APPLICATION – readily availabe up to 20 ft. stock lengths; thus, eliminating joints and connections.
- LOAD BEARING – heavier sections can be designed to support truck traffic and related industrial uses.
- FINISH – available in more surface coatings, such as vinyl coating, even fiberglass, for corrosive or volatile applications.

STAIR TREADS

Stair Treads are available in all of the grating and expanded metal products shown in this section. When ordering Stair Treads specify:

1. Type of grating or expanded metal product
2. Width and length of Stair Tread
3. Type of nosing – plain, 4-Way Safety Plate, abrasive plate
4. Hole size and spacing in side plates for mounting



ALLOY STEELS

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Plate 112
Rounds –
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  - Annealed.....109-110
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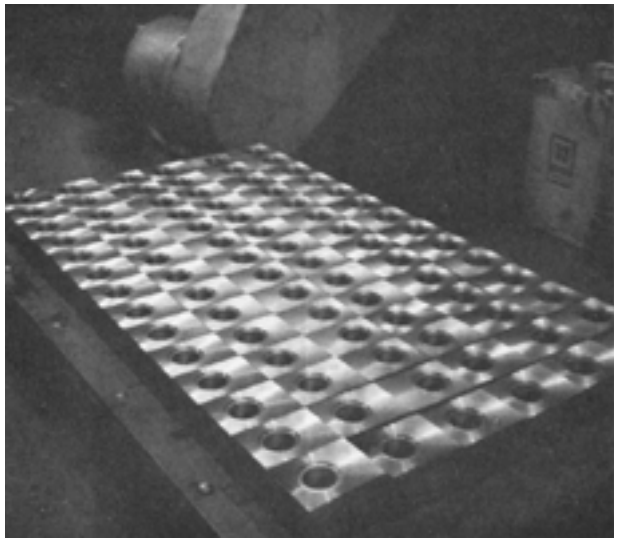
–your “full service” center for processing alloy steels

BORING	SAW CUTTING
DRILLING	STRESS RELIEVING
HEAT TREATING	TAPPING
MACHINING	THREADING
PLANING	TURNING



Machined hydraulic flanges

ALLOY STEELS

Alloy bars are essentially carbon grade bars to which have been added various chemical elements. The primary alloying elements are nickel, chromium, manganese, molybdenum, vanadium, silicon and copper. The purpose of adding these elements is to improve the mechanical properties of the finished products. Alloy bars are classified by the following groups:

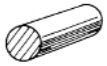
Case Hardening, Low Carbon
8620, 86L20 – these grades are low alloy carburinzing steels which can develop a uniformly hard case with a tough, ductile core; heat treat distortion is minimal. Specifications: ASTM-A-322, Hot Rolled; ASTM-A-331, Cold Finished.

Medium Carbon, Annealed
4140/4142, 41L40/41L42, 4147/4150, 41L47/41L50, 4150 RS, 4340 – these grades are oil hardening steels designed for applications requiring both strength and toughness. These grades can be quenched and tempered to a broad range of mechanical properties; moreover, they can also be flame or induction hardened to increase surface hardness for wear resistance applications. Specifications: ASTM-A-322, Hot Rolled; ASTM-A-331, Cold Finished.

Medium Carbon, Heat Treated
4140/4142, 41L40/41L42, 4147/4150, 41L47/41L50, 4150 Mod RS, 4340, ETD150 – these grades are quenched and tempered steels developed for the best combination of toughness and strength. Because these bars are pre-heat treated, high strength parts can be machined directly from the bar, thus elminating subsequent heat-treat costs. Furthermore, since these bars are stress relief annealed, distortion problems typically associated with machining high strength bars are practically eliminated. Specifications: ASTM-A-331, Hot Rolled and Cold Finished; except, ETD 150, trademark of LaSalle Steel Co.

Bolting Stock
4140/4142 – these grades are quenched and tempered steels manufactured as bolting material for various pressure vessel, high temperature applications. Military specificatons material is subject to surface magnetic testing. Specifications: ASTM-A-193, B7; ASME-SA-193, B7; MIL-S-1222, Grade B7; ASTM-A-43A, CL BC.

Aircraft Alloys
E4130, E4140, E4340 – these grades are electric furnace melt steels which have been tested as suitable for aircraft components which are then magnetic particle inspected; all grades of this material conform to applicable military and testing association requirements. Specifications; ASTM-A-322, Hot Rolled; ASTM-331, Cold Finished.



HOT ROLLED ALLOY ROUNDS

As Rolled - Machine Straightened
8620 86L20
ASTM-A-322

Size in Inches	Weight per Ft. Lbs.	Stock Lengths Feet 8620	86L20
* ½	.668	16	
* ⅝	1.043	16	
* ¾	1.502	16	20
* ⅞	2.045	16	20
*1	2.670	16	20
*1⅛	3.380	16	20
*1¼	4.172	16	20
*1⅜	5.049	16	20
*1½	6.008	16	20
*1⅝	7.051	16	20
1¾	8.178	16	20
1⅞	9.338	16	20
2	10.68	16	20
2⅛	12.06	16	20
2¼	13.52	16	20
2⅜	15.06	16	20
2½	16.69	16	20
2⅝	18.40	16	20
2¾	20.19	16	20
2⅞	22.07	16	20
3	24.03	10,20	10,20
3⅛	26.08	10,20	10,20
3¼	28.21	10,20	10,20
3⅜	30.42	10,20	10,20
3½	32.71	10,20	10,20
3⅝	35.09	10,20	10,20
3¾	37.55	10,20	10,20
4	42.73	10,20	10,20
4⅛	45.44	10,20	10,20
4¼	48.23	10,20	10,20
4½	54.08	10,20	10,20
4¾	60.25	10,20	10,20
5	66.76	10,20	10,20
5¼	73.60	10,20	10,20
5½	80.78	10,20	10,20
5¾	88.29	10,20	10,20
6	96.13	10,20	10,20
6¼	104.31	10,20	10,20
6½	112.82	10,20	10,20
6¾	121.67	10,20	10,20
7	130.85	10,20	10,20
7¼	140.36	10,20	10,20
7½	150.21	10,20	10,20
7¾	160.39	10,20	10,20
8	170.90	10,20	10,20
8¼	181.75	10,20	....
8½	192.93	10,20	10,20
9	216.30	10,20	10,20
9½	241.00	10,20	10,20
10	267.00	10,20	....

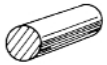
*These sizes are not machine straightened.
Additional sizes available up to 24" diameter.

HOT ROLLED ALLOY ROUNDS

Annealed • Machine Straightened
4130, 4140-4142. 4147-4150, 4350
ASTM-A-322 AMS 2301

Size in Inches	Weight per Ft. Lbs.	Stock Lengths Feet 4130	4140 4142	4147 4150	4340
½	.668	...	16	...	...
⅝	1.043	...	16	...	...
¾	1.502	...	16	...	...
⅞	2.045	...	16	...	...
1	2.670	...	16	...	16
1⅛	3.380	...	16	...	16
1¼	4.172		16	...	16
1⅜	5.049	16	16	...	...
1½	6.008	16	16	...	16
1⅝	7.051	...	16	...	16
1¾	8.178	...	16	...	16
1⅞	9.338	...	16	...	16
2	10.68	...	16	...	16
2⅛	12.06	...	16	...	16
2¼	13.52	...	16	...	16
2⅜	15.06	...	16	...	16
2½	16.69	16	16	...	16
2⅝	18.40	...	16	...	16
2¾	20.19	16	16	...	16
2⅞	22.07	...	16	...	16
3	24.03	10,20	10,20	...	10,20
3⅛	26.08	...	10,20	10,20	10,20
3¼	28.21	10,20	10,20	10,20	10,20
3⅜	30.42	...	10,20	10,20	10,20
3½	32.71	10,20	10,20	10,20	10,20
3⅝	35.09	...	10,20	10,20	10,20
3¾	37.55	10,20	10,20	10,20	10,20
3⅞	40.10	...	10,20	10,20	...
4	42.73	10,20	10,20	10,20	10,20
4⅛	45.44	...	10,20	10,20	...
4¼	48.23	...	10,20	10,20	10,20
4½	54.08	10,20	10,20	10,20	10,20
4¾	60.25	10,20	10,20	10,20	10,20
5	66.76	10,20	10,20	10,20	10,20
5¼	73.60	...	10,20	10,20	10,20
5½	80.78	10,20	10,20	10,20	10,20
5¾	88.29	...	10,20	10,20	10,20
6	96.13	10,20	10,20	10,20	10,20
6¼	104.31	...	10,20	10,20	10,20
6½	112.82	10,20	10,20	10,20	10,20
6¾	121.67	...	10,20	10,20	10,20
7	130.85	10,20	10,20	10,20	10,20
7¼	140.36	...	10,20	10,20	10,20
7½	150.21	10,20	10,20	10,20	10,20
7¾	160.39	...	10,20	10,20	10,20
8	170.90	10,20	10,20	10,20	10,20
8½	192.93	10,20	10,20	10,20	10,20
9	216.30	10,20	10,20	10,20	10,20
9½	241.00	10,20	10,20	10,20	10,20
10	267.00	10,20	10,20	10,20	10,20
11	322.80		10,20		
11¼	338.40		10,20		
13¼	469.20		10,20		
14¼	542.40		10,20		
15½	642.00		10,20		
17	771.60		10,20		

*Sizes up to 3" Dia. incl. 41L42, 3⅛ to 5" Dia. 41L47, over 5" Dia. 41L50.
Additional sizes available up to 24" diameter.



HOT ROLLED ALLOY ROUNDS

Annealed • Machine Straightened

41L40-41L42, 41L47-41L50, 4150 Modified Resulphurized

ASTM-A-331

Size in Inches	Weight per Ft. Lbs.	Stock Lengths Feet 41L40 41L42	41L47 41L50	4150 Mod. R.S.
¾	1.502	16	16	16
⅞	2.045	16	16	16
1	2.670	16	16	16
1⅛	3.380	16	16	16
1¼	4.172	16	16	16
1⅜	5.049	16	16	16
1½	6.008	16	16	16
1⅝	7.051	16	16	16
1¾	8.178	16	16	16
1⅞	9.338	16	16	16
2	10.68	16	16	16
2⅛	12.06	16	16	16
2¼	13.52	16	16	16
2⅜	15.06	16	16	16
2½	16.69	16	16	16
2⅝	18.40	16	16	16
2¾	20.19	16	16	16
2⅞	22.07	16	16	16
3	24.03	10,20	10,20	10,20
3⅛	26.08	10,20	10,20	10,20
3¼	28.21	10,20	10,20	10,20
3½	32.71	10,20	10,20	10,20
3⅝	35.09	10,20	10,20	10,20
3¾	37.55	10,20	10,20	10,20
4	42.73	10,20	10,20	10,20
4¼	48.23	10,20	10,20	10,20
4½	54.08	10,20	10,20	10,20
4¾	60.25	10,20	10,20	10,20
5	66.76	10,20	10,20	10,20
5¼	73.60	10,20	10,20	10,20
5½	80.78	10,20	10,20	10,20
5¾	88.29	10,20	10,20	10,20
6	96.13	10,20	10,20	10,20
6¼	104.31	10,20	10,20	10,20
6½	112.82	10,20	10,20	10,20
6¾	121.67	10,20	10,20	10,20
7	130.85	10,20	10,20	10,20
7¼	140.36	10,20	10,20	10,20
7½	150.21	10,20	10,20	10,20
7¾	160.39	10,20	10,20	10,20
8	170.90	10,20	10,20	10,20
8½	192.93	10,20	10,20	10,20
9	216.30	10,20	10,20	10,20
9½	241.00	10,20	10,20	10,20
10	267.00	10,20	10,20	10,20

* Additional sizes available up to 24” diameter.

HOT ROLLED ALLOY ROUNDS

Heat Treated • Machine Straightened

Oil Quenched Tempered Strain Relieved

4150 Modified-Resulphurized

4142-4250, 41L42 41L50, 4340

ASTM--A-322

Size in Inches	Weight per Ft. Lbs.	Stock Lengths Feet 4150 Mod. R.S.	*4142 H.T. 4147 H.T. 4150 H.T.	41L42 H.T. 41L47 H.T. 41L50 H.T.	4340
½	.668	16	16	...	...
⅝	1.043	16	16	...	...
¾	1.502	16	16	...	...
⅞	2.045	16	16	16	...
1	2.670	16	16	16	16
1⅛	3.380	16	16	16	16
1¼	4.172	16	16	16	16
1⅜	5.049	16	16	16	16
1½	6.008	16	16	16	16
1⅝	7.051	16	16	16	16
1¾	8.178	16	16	16	16
1⅞	9.338	16	16	16	16
2	10.68	16	16	16	16
2⅛	12.06	16	16	16	16
2¼	13.52	16	16	16	16
2⅜	15.06	16	16	16	16
2½	16.69	16	16	16	16
2⅝	18.40	16	16	16	16
2¾	20.19	16	16	16	16
2⅞	22.07	16	16	16	16
3	24.03	10,20	10,20	10,20	10,20
3⅛	26.08	10,20	10,20	10,20	10,20
3¼	28.21	10,20	10,20	10,20	10,20
3⅜	30.42	10,20	10,20	10,20	10,20
3½	32.71	10,20	10,20	10,20	10,20
3⅝	35.09	10,20	10,20	10,20	10,20
3¾	37.55	10,20	10,20	10,20	10,20
4	42.73	10,20	10,20	10,20	10,20
4⅛	45.44	10,20	10,20	10,20	10,20
4¼	48.23	10,20	10,20	10,20	10,20
4½	54.08	10,20	10,20	10,20	10,20
4¾	60.25	10,20	10,20	10,20	10,20
5	66.76	10,20	10,20	10,20	10,20
5¼	73.60	10,20	10,20	10,20	10,20
5½	80.78	10,20	10,20	10,20	10,20
5¾	88.29	10,20	10,20	10,20	10,20
6	96.13	10,20	10,20	10,20	10,20
6¼	104.31	10,20	10,20	10,20	10,20
6½	112.82	10,20	10,20	10,20	10,20
6¾	121.67	10,20	10,20	10,20	10,20
7	130.85	10,20	10,20	10,20	10,20
7¼	140.36	10,20	10,20	10,20	10,20
7½	150.21	10,20	10,20	10,20	10,20
7¾	160.39	10,20	10,20	10,20	10,20
8	170.90	10,20	10,20	10,20	10,20
8½	192.93	10,20	10,20	10,20	10,20
9	216.30	10,20	10,20	10,20	10,20
9½	241.00	10,20	10,20	10,20	10,20
10	267.00	10,20	10,20	10,20	10,20

Additional Sizes available up to 24” diameter.

*Many sizes available as ASTM-A-193-B7, Bolting Material for high temperature service.

HOT ROLLED ALLOY FLATS

4150 Modified Resulphurized Annealed

STOCK LENGTHS: 10' TO 20'

ASTM-A-322

Size in Inches	Weight per Ft. in Lbs.
¼ x 1	.850
1½	1.28
2	1.70
2½	2.13
3	2.55
⅜ x 1	1.28
1¼	1.59
1½	1.91
2	2.55
2½	3.19
3	3.83
½ x 1½	2.55
2	3.40
2½	4.25
3	5.10
4	6.80
⅝ x 1½	3.19
2	4.25
3	6.38
4	8.50
¾ x 1¼	3.19
1½	3.83
2	5.10
2½	6.38
3	7.65
4	10.20
5	12.75
1 x 1½	5.10
2	6.80
2½	8.50
3	10.20
3½	11.90
4	13.60
4½	15.30
5	17.00
6	20.40
1¼ x 1½	6.38
1¾	7.44
2	8.50
2½	10.63
3	12.75
3½	14.88
4½	19.13
5	21.25
6	25.50
1½ x 2	10.20
2½	12.75
3	15.30
3½	17.85
4	20.40
4½	22.95
5	25.50
6	30.60
1¾ x 2½	14.88
3	17.85
4	23.80
2 x 2½	17.00
3	20.40
3½	23.80
4	27.20
4½	30.60
5	34.00
6	40.80
2½ x 3	25.50
3½	29.75
4	34.00
4½	38.26
5	42.50
6	51.00
3 x 3½	35.70
4	40.80
5	51.00
6	61.20
4 x 6	81.60

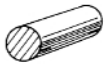
COLD FINISHED ALLOY ROUNDS

Annealed

8620 86L20

ASTM-A-321

Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet 8620	Random Lengths Feet 86L20
3/16	.094	12	...
¼	.167	12	12
5/16	.261	12	12
⅜	.376	12	12
7/16	.511	12	12
½	.668	12	12
9/16	.845	12	12
⅝	1.043	12	12
11/16	1.262	12	12
¾	1.502	12	12
13/16	1.763	12	12
⅞	2.045	12	12
15/16	2.347	12	12
1	2.670	12	12
1 1/16	3.015	12	12
1⅛	3.380	12	12
1 3/16	3.766	12	12
1¼	4.172	12	12
1 5/16	4.600	12	12
1⅜	5.049	12	12
1 7/16	5.518	12	12
1½	6.008	12	12
1 9/16	6.519	12	12
1⅝	7.051	12	12
1 11/16	7.604	12	...
1¾	8.178	12	12
1⅞	9.388	12	12
1 15/16	10.02	12	12
2	10.68	12	12
2 1/16	11.36	12	12
2⅛	12.06	12	12
2¼	13.52	12	12
2⅜	15.06	12	12
2½	16.69	12	12
2⅝	18.40	12	12
2¾	20.19	12	12
2⅞	22.08	12	12
3	24.03	12	12
3¼	28.21	12	12
3½	32.71	12	12
3¾	37.55	12	...
4	42.73	12	12
4¼	48.23	12	...
4½	54.08	12	12
4¾	60.25	12	...
5	66.76	12	...
5½	80.78	12	...
6	96.13	12	...



COLD FINISHED ALLOY ROUNDS

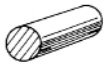
Annealed

4140-4142, 41L40-41L42, 41L47-41L50, 4340

ASTM-A-331

Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet 4140 4142	41L40 41L42 41L47 41L50	4340
¼	.167	12	12	. . .
5/16	.261	12	12	. . .
⅜	.376	12	12	. . .
7/16	.511	12	12	12
½	.668	12	12	12
9/16	.845	12	12	12
⅝	1.043	12	12	12
11/16	1.262	12	12	. . .
¾	1.502	12	12	12
13/16	1.763	12	12	. . .
⅞	2.045	12	12	12
15/16	2.347	12	12	. . .
1	2.670	12	12	12
1 1/16	3.015	12	12	. . .
1⅛	3.380	12	12	12
1 3/16	3.766	12	12	. . .
1¼	4.172	12	12	12
1 5/16	4.600	12	12	. . .
1⅜	5.049	12	12	. . .
1 7/16	5.518	12	12	. . .
1½	6.008	12	12	12
1 9/16	6.519	12	12	. . .
1⅝	7.051	12	12	. . .
1 11/16	7.600	. . .	12	. . .
1¾	8.178	12	12	. . .
1⅞	9.388	12	12	. . .
1 15/16	10.024	12	12	. . .
2	10.68	12	12	. . .
2⅛	12.06	12	12	. . .
2¼	13.52	12	12	. . .
2⅜	15.06	12	12	. . .
2 7/16	15.87	12	. . .	. . .
2½	16.69	12	12	12
2 9/16	17.53	12	. . .	. . .
2⅝	18.40	12	12	. . .
2¾	20.19	12	12	. . .
2⅞	22.07	12	12	. . .
3	24.03	12	12	12
3⅛	26.08	12	12	. . .
3¼	28.21	12	12	. . .
3⅜	30.42	. . .	12	. . .
3½	32.71	12	12	12
3¾	37.55	12	12	. . .
4	42.73	12	12	12
4¼	48.23	12	12	. . .
4½	54.08	12	12	. . .
4¾	60.25	12	. . .	. . .
5	66.76	12	. . .	. . .

COLD FINISHED ALLOY ROUNDS



Heat Treated

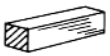
Quenched Tempered Cold Drawn Strain Relieved

4140-4142* 41L40-41L50 ETD 150®

ASTM-A-331*

Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet 4140- * 4142 H.T.	41L40- * 41L50 H.T.	ETD 150
¼	.167	12	. . .	. . .
⅜	.376	12	12	. . .
7/16	.511	. . .	12	12
½	.668	12	12	12
9/16	.845	. . .	12	12
⅝	1.043	12	12	12
11/16	1.262	. . .	12	12
¾	1.502	12	12	12
13/16	1.763	. . .	12	12
⅞	2.045	12	12	12
15/16	2.347	12	12	12
1	2.670	12	12	12
1 1/16	3.015	12	12	12
1⅛	3.380	12	12	12
1 3/16	3.766	. . .	. . .	12
1¼	4.172	12	12	12
1⅜	5.049	12	12	12
1 7/16	5.518	12	12	12
1½	6.008	12	12	12
1 9/16	6.519	. . .	12	12
1⅝	7.051	12	12	12
1 11/16	7.600	. . .	12	12
1¾	8.178	12	12	12
1⅞	9.388	12	12	12
1 15/16	10.024	12	12	12
2	10.68	12	12	12
2⅛	12.06	12	12	12
2¼	13.52	12	12	12
2⅜	15.06	12	12	12
2½	16.69	12	12	12
2⅝	18.40	. . .	. . .	12
2¾	20.19	12	12	12
2⅞	22.07	. . .	. . .	12
2 15/16	23.04	12	12	. . .
3	24.03	12	12	12
3⅛	26.08	. . .	. . .	12
3¼	28.21	12	12	12
3½	32.71	12	12	12
3¾	37.55	12	12	. . .
4	42.73	12	12	. . .
4¼	48.23	12	. . .	. . .
4½	54.08	12	. . .	. . .
4¾	60.25	12	. . .	. . .
5	66.76	12	. . .	. . .
5½	80.78	12	. . .	. . .
6	96.13	12	. . .	. . .

*Many sizes available as ASTM-A-193-B7, Bolting Material for high temperature service



COLD DRAWN ALLOY SQUARES

4140/4142 Annealed
ASTM-A-331

Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet	Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet
¼	.213	12	1⅛	4.30	12
⅜	.478	12	1¼	5.31	12
7/16	.651	12	1⅜	6.43	12
½	.851	12	1½	7.65	12
9/16	1.08	12	1¾	10.42	12
⅝	1.33	12	2	13.60	12
¾	1.90	12	2¼	17.22	12
⅞	2.60	12	2½	21.26	12
1	3.40	12	2¾	25.73	12
			3	30.60	12

COLD DRAWN ALLOY HEXAGONS

4140/4142 **41L40/41L50** Annealed
ASTM-A-331

4140/4142 Heat Treated
ASTM-A-193 Gr B7

Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet	Size in Inches	Weight per Ft. Lbs.	Random Lengths Feet
⅜	.414	12	1⅝	7.78	12
½	.736	12	1¾	9.02	12
⅝	1.150	12	1⅞	10.36	12
¾	1.656	12	2	11.78	12
⅞	2.254	12	2¼	14.91	12
1	2.945	12	2½	18.40	12
1¼	4.601	12	2¾	22.27	12
1⅜	5.567	12	3	26.50	12
1½	6.625	12	3¼	31.10	12

Many sizes of 4140 H.T. hexagons available as ASTM-A-193-B7, Bolting Material for high temperature service.

ALLOY PLATE

4140/E4140 Annealed **8620/E8620** As Rolled
Stock Lengths: 10', 20'
ASTM-A-322

Size in Inches	Weight per Sq. Ft.	Size in Inches	Weight per Sq. Ft.
¼ x 84	10.21	2 x 84	81.68
⅜ x 84	15.32	2¼ x 84	91.89
½ x 84	20.42	2½ x 84	102.10
⅝ x 84	25.53	2¾ x 84	112.31
¾ x 84	30.63	3 x 84	122.52
⅞ x 84	35.74	3¼ x 84	132.72
1 x 84	40.84	3½ x 84	142.93
1⅛ x 84	45.95	4 x 84	163.35
1¼ x 84	51.05	4½ x 84	183.77
1⅜ x 84	56.16	5 x 84	204.19
1½ x 84	61.26	6 x 84	245.03
1¾ x 84	72.47	7 x 84	285.90

STANDARD MANUFACTURING TOLERANCES

Hot Rolled Alloy Steel Bars
ROUNDS AND SQUARES

Specified Size in Inches	Variation from Size in Inches: Over	Variation from Size in Inches: Under	Out of Round* or Square in Inches
Up to 5/16, incl.	.005	.005	.008
Over ⅝ to 7/16, incl.	.006	.006	.009
Over 7/16 to ⅝, incl.	.007	.007	.010
Over ⅝ to ⅞, incl.	.008	.008	.012
Over ⅞ to 1, incl.	.009	.009	.013
Over 1 to 1⅛, incl.	.010	.010	.015
Over 1⅛ to 1¼, incl.	.011	.011	.016
Over 1¼ to 1⅜, incl.	.012	.012	.018
Over 1⅜ to 1½, incl.	.014	.014	.021
Over 1½ to 2, incl.	1/64	1/64	.023
Over 2 to 2½, incl.	1/32	. . .	.023
Over 2½ to 3½, incl.	3/64	. . .	.035
Over 3½ to 4½, incl.	1/16	. . .	.046
Over 4½ to 5½, incl.	5/64	. . .	.058
Over 5½ to 6½, incl.	⅛	. . .	.070
Over 6½ to 8¼, incl.	5/32	. . .	.085
Over 8½ to 9½, incl.	3/16	. . .	.100

*Out-of-round is the difference between the maximum and minimum diameters of a round bar measured at the same cross section. Out-of-square is the difference in the two dimensions at the same cross section of a square bar – each dimension being the difference between opposite faces.

SQUARE EDGE AND ROUND EDGE FLATS

Thickness and Width Tolerances
Tolerances apply to thickness in Inches

Specified width in Inches	Variations from Thickness in Inches (Tolerances are over or under): .203-.230 excl.	Under ¼	¼-½	Over ½-1	Over 1-2	Over 2-3	Over 3	Variations from width in Inches: Over	Under
Up to 1	0.007	.007	.008	.010	.....	.....	.....	1/64	1/64
Over 1-2	0.007	.007	.012	.015	1/32	.....	.....	1/32	1/32
Over 2-4	0.008	.008	.015	.020	1/32	3/64	3/64	1/16	1/32
Over 4-6	0.009	.009	.015	.020	1/32	3/64	3/64	3/32	1/16
Over 6-8		.015	.016	.025	1/32	3/64	.....	1/8	3/32

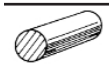
Standard Straightness – 1/4" in any 5 feet, or 1/4" x number of feet of length divided by 5.
Special Straightness – 1/8" in any 5 feet, or 1/8" x number of feet of length divided by 5.

NOTE: Straightness tolerances do not apply to hot rolled alloy steel bars if any subsequent heating operation has been performed.

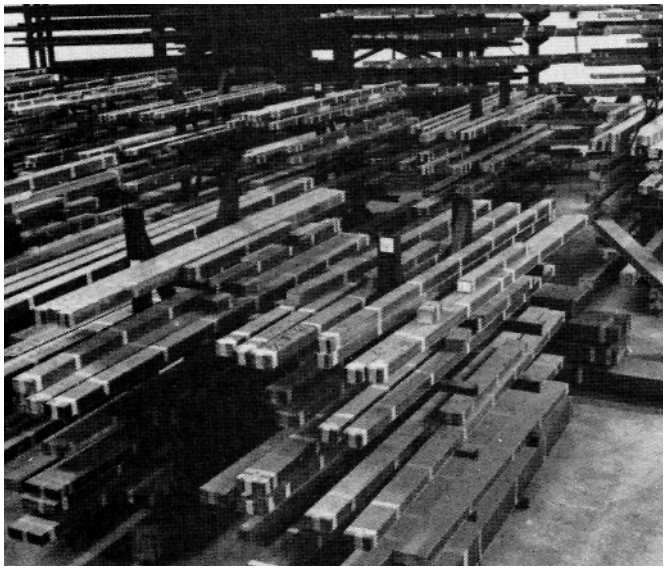
STANDARD MANUFACTURING TOLERANCES

Cold Drawn Alloy Steel Bars

ALL TOLERANCES ARE MINUS

ROUNDS Cold Drawn or Turned and Polished	Maximum of Carbon Range .28% or Less	Maximum of Carbon Range Over .28% to .55% Inc.	Annealed or Stress Relieved after Cold Finishing Max. Carbon to .55% Incl	Carbons over .55% max. Also all Carbons Heat Treated (Quench & Draw) or Normalized & Tempered
 **ROUND BARS**				
To 1½" Inc.	.003"	.004"	.005"	.006"
Over 1½" to 2½" Incl.	.004"	.005"	.006"	.007"
Over 2½" to 4" Incl.	.005"	.006"	.007"	.008"
Over 4" to 6" Incl.	.006"	.007"	.008"	.009"
Over 6" to 8" Incl.	.007"	.008"	.009"	.010"
Over 8" to 9" Incl.	.008"	.009"	.010"	.011"
Over 9"	.009"	.010"	.011"	.012"
HEXAGONS				
Up to ¾" Incl.....	.003"	.004"	.005"	.007"
Over ¾" to 1½" Incl.	.004"	.005"	.006"	.008"
Over 1½" to 2½" Incl.	.005"	.006"	.007"	.009"
Over 2½" to 3⅛" Incl.	.006"	.007"	.008"	.010"
SQUARES				
Up to ¾" Incl.....	.003"	.005"	.006"	.008"
Over ¾" to 1½" Incl.	.004"	.006"	.007"	.009"
Over 1½" to 2½" Incl.	.005"	.007"	.008"	.010"
Over 2½" to 4" Incl.	.007"	.009"	.010"	.012"
Over 4" to 5" Incl.	.011"			
FLATS				
Up to ¾" Incl.....	.004"	.005"	.007"	.009"
Over ¾" to 1½" Incl.	.005"	.006"	.009"	.011"
Over 1½" to 3" Incl.	.006"	.007"	.011"	.013"
Over 3" to 4" Incl.	.007"	.009"	.012"	.017"
Over 4" to 6" Incl.	.009"	.011"	.013"	.021"
Over 6"	.014"			

Tolerances for Flats apply to Thickness as well as to Width.



TOOL STEELS

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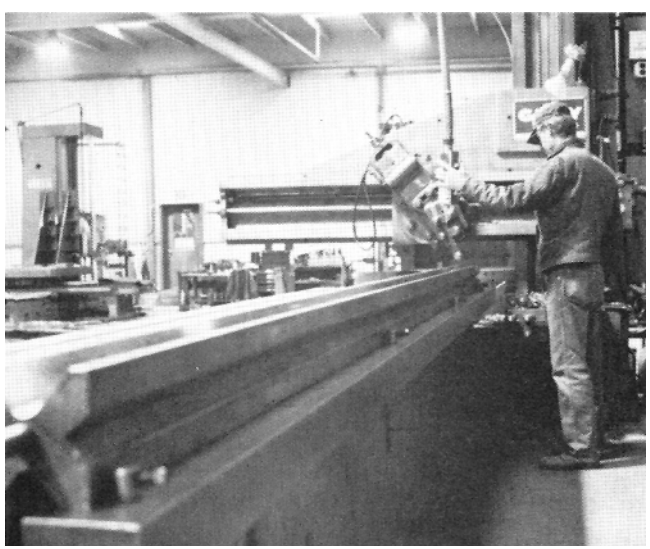
–your stocking tool steel distributor with complete machining facilities

BORING	SAW CUTTING
DRILLING	STRESS RELIEVING
HEAT TREATING	TAPPING
MACHINING	THREADING
PLANING	TURNING



Brake Die Tool Steel machined on our 16-ft. planer

TOOL STEELS

Choosing the Right Grade of Tool Steel

If maximum service life and efficiency are to be obtained from tools and dies, it is most important that the proper grade of tool steel be selected for a given application. In this Product Manual, we offer the results of the experience gained in working with tool steels over a period of years. No one booklet can provide all the answers to every manufacturing problem. We urge the user to avail himself of our metallurgical services should a doubt exist as to whch grade is preferred. A telephone call is all that is necessary.

TOP QUALITY TOOL STEELS ARE STOCKED IN THESE GRADES

(Appropriate AISI designations included, where applicable)

Water-hardening
AISI-W1 and W2

Cold-work
AISI-O1* and O2*
AISI-O6*
AISI-A2*
AISI-A6* and A8
AISI-D2*, D3, D5* and D7
A-HT*

Hot-work
AISI-H11
AISI-H12
AISI-H13
AISI-H21

High-speed
AISI-M1 AISI-M7 AISI-T4
AISI-M2 AISI-M10 AISI-T5
AISI-M3-1 AISI-M42 AISI-T8
AISI-M3-2 AISI-T1 AISI-15-15
AISI-M4 AISI-T2

Plastic Mold Steels
AISI-420 Stainless
AISI-S7*
AISI-P20

Special Purpose
AISI-L6
Brake-Die (Prehardened)
Non-Tempering
Holder Block
Marshalloy PH Tooling Plate

Shock-resisting
AISI-S1
AISI-S2
AISI-S5
AISI-S7*

*** Deluxe, decarb-free tool steels, milled-finish to .015/.035 in. oversize.**

To prevent unnecessary and costly delays, sufficient and accurate information should be given when ordering tool steels. We suggest the following information be included:

Type, Brand Name and Application – State the AISI designation or trade name of the tool steel desired and the intended use.

Size, Section and Tolerances – Sufficient allowance for machining and removal of decarburizatrion should be included.

Length – If other than mill length is desired, indicate whether steel is to be machine-cut to exact lengths or approximate lengths.

Surface Finish – If other than hot-rolled finish is desired, specify whether the steel is to be decarb free centerless-ground, or rough-turned.

Decarb Free – This is a smooth surface finish milled to 100 RMS nominal (125 RMS maximum). This uniform metal removal ensures freedom from decarburization, eliminates waste, ends costly rough machining operations and removes the primary cause of warpage in heat treatment. Sectional tolerances are: Plus .015” to .035”; Minus .000”, Standard Lengths are 10 to 12 feet. Each bar is individually packaged with surfaces treated to prevent corrosion.

Type of Operation – The purpose and description of the operation for which the tool steel is intended should be furnished, wherever possible. This is often of vital importance, since it assures proper application of the steel, or permits us to suggest a more suitable grade.

Comparison Guide of Tool Steel Properties

Groups and Names of Tool Steels			AISI, SAE Designation	Quenching Medium	Wear Resistance	Toughness	Resistance to Decarburization	Red Hardness	Machinability Rating	Annealed Hardness Brinell (max)
Water Hardening	Carbon		W1	B or W	L to M	H	H	L	VH	187
	Carbon-Vanadium		W2	B or W	L to M	H	H	L	VH	187
Cool Work Tool & Die Steels	Oil Hardening		O1	O	M	M	H	L	H	202
			O2	O	M	M	H	L	H	217
			O6	O	M	M	H	L	VH	212
	Air Hardening		A2	A	H	M	M	H	M	212
			A6	A	M to H	M	M to H	M	L to M	229
			A8	A	M to H	H	M	H	M	207
			D2	A	H to VH	L	M	H	L	217
		A-HT	–	A	H to VH	H	M	M	M	212
Shock Resisting Steels			S1	O	L to M	VH	M	M	M	212
			S2	B or W	L to M	VH	L	L	M to H	207
			S5	O or W	L to M	VH	L	L	M to H	229
			S7	A or O	L to M	VH	M	H	M	197
Hot Work Steels			H11	A	M	VH	M	H	M to H	207
			H12	A	M	VH	M	H	M to H	217
			H13	A	M	VH	M	H	M to H	207
			H21	A or O	M to H	H	M	VH	M	241
High Speed Steels			M2	O, A, or S	VH	L	M	VH	M	241
			M4	O, A, or S	VH	L	M	VH	L to M	241
			M42	O, A, or S	VH	L	L	VH	M	265
			T1	O, A, or S	VH	L	H	VH	M	241
			T15	O, A, or S	VH	L	M	VH	M	277
Plastic Mold Steels			P20	–	L to M	H	H	L	M to H	Pre-Hardened
			420	O or A	M	M	M	L	M to H	223
			S7	A or O	L to M	VH	M	H	M	197
Special Purpose Steels			L6	O	M	VH	H	L	M	217
			F2	W or B	H to VH	L	H	L	M	235
			A8	A	M to H	M	M to H	H	M	207
	Brake-Die		–	–	M	H	H	L	M	Pre-Hardened
	Non-Tempering		–	O or W	L	M	VH	L	M	Unannealed
	Holder Block		–	–	M	H	H	L	M	Pre-Hardened

Lengend

A – Air Quench
B – Brine Quench
O – Oil Quench
S – Salt Bath Quench
W – Water Quench
VH – Very High
H – High
M – Medium
L – Low

CARBON TOOL STEELS
AISI-W1

Carbon 0.75/0.85 – Unannealed
This carbon range produces a tool steel having both maximum toughness and adequate wear-resistance for general-purpose blacksmithing tools such as chisels, moil points, etc.

Carbon 1.00/1.10 – Annealed
Carbon 1.00 to 1.10: For general purpose tooling requiring a good combination of wear-resistance and toughness.

LC (Low Carbon) GROUND FLAT STOCK
SAE TYPE C-1018 FINE GRAINED SILICON KILLED
TYPICAL ANALYSIS

Carbon	Mn.	Si	Phos.	S.
.18	.50	.20	.04 max	.04 max

A fine grained silicon killed SAE Type C-1018 Steel, this precision prepared, low carbon steel was developed for those accurately dimensioned parts which do not require tool steel.

Heat-Treatment

In most cases, LC Low Carbon will be used as is and not hardened. If needed carburizing a maximum depth of 1/32" hardness will be obtained if piece is held in carburizing salt at 1700˚ F. for three hours. In case hardeneing with sodium cyanide, a maximum depth of .006" may be obtained if piece is immersed in bath for 30 min. @ 1500˚ F.

LC (Low Carbon) GROUND SQUARE PLATES
SAE TYPE C-1018 FINE GRAINED SILICON KILLED

Carbon	Mn.	Si	Phos.	S.
.18	.50	.20	.04 max	.04 max

A fine grained silicon killed SAE Type C-1018 Steel, this precision prepared, low carbon steel is Blanchard ground to a tolerance of plus or minus .005" on thickness. All surfaces are free of decarburization.

Heat-Treatment

In most cases, LC Low Carbon will be used as is and not hardened. If needed, carburizing a maximum depth of 1/32" hardness will be obtained if piece is held in carburizing salt at 1700˚ F. for three hours. In case hardeneing with sodium cyanide, a maximum depth of .006" may be obtained if piece is immersed in bath for 30 min. @ 1500˚ F.

COLD WORK TOOL STEELS
AISI-01
(Oil-Hardening)
Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Chromium	Tungsten	Vanadium
0.90	1.20	0.50	0.50	0.20

01 is the standard type of oil-hardening tool steel. It is suitable for all general-purpose tools and dies which require a safer and deeper hardening steel than the carbon, water-hardening types.

Heat-Treatment

Annealing	1450˚ F, furnace-cool, Brinell 202 Max.
Hardening	1475˚ F, oil-quenched to 150˚ F.
Tempering	300˚ F to 450˚ F, average hardness Rockwell Rc 57-62.

O1 is dimensionally stable in treatment – it expands .0015 in. / in. max.

AISI-02
Annealed
TYPICAL ANALYSIS

Carbon	Mn.	Silicon
.90	1.60	.25

02 is an oil-hardening, non-deforming tool steel especially suited for general purpose toolroom work. It is safe to harden, even in the most intricate sections, and shows very little size change or warpage during the hardening operation.

Heat-Treatment

Annealing	1375˚ F to 1425˚ F, furnace-cool to 1000˚, hold for 1 hr. / inch, greatest cross section, air cool Brinell 217 max.
Preheating	1200˚ F prior to hardening.
Hardening	1425˚ to 1525˚ F, oil-quench to 150˚. F.
Tempering	375˚ F to 400˚ F, average hardness Rockwell C60-62.

AISI-06
(Graphitic Oil-Hardening)

Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Silicon	Mo.
1.45	1.00	1.25	.025

06 is the graphitic type of oil-hardening tool steel. its uniform distribution of graphitic carbon insures excellent machinability. **06** is recommended for tools and dies performing deep-drawing operations or when non-seizing properties are important to the life of the tool.

Heat-Treatment

Annealing	1425˚ to 1450˚ F, furnace-cool to 1000˚ F, hold for 1 hr ./ inch greatest cross section, air cool. Brinell 217 max.
Preheating	1250˚ F prior to hardening.
Hardening	1450˚ to 1500˚ F, oil-quench to 150˚ F.
Tempering	400˚ F, average hardness Rockwell C61-62.

AISI-A2
(5% Chrome Air-Hardening)

Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Chromium	Mo.	Vanadium
1.00	0.60	5.25	1.10	0.25

A2 is a medium-alloy, air-hardening tool steel. It is safer in hardening and has less distortion in heat-treating than the oil-hardening types. Its ability to hold a keen cutting edge, resistance to abrasion and wear, and deep-hardening properties, **A2** exceeds the regular oil-hardening grades.

Heat-Treatment

Annealing	1650˚ F, furnace-cool, Brinell 212 max.
Preheating	1200˚ F, prior to hardening.
Hardening	1775˚ F, air-quench to 150˚ F.
Tempering	350˚ F to 400˚ F, resulting hardness Rockwell C60-61.

A2 is safe in treatment – it holds its size and shape during heat-treatment, expanding .001 in. / in. max.

AISI-06

Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Silicon	Chromium	Mo.
.070	2.00	0.30	1.00	1.25

A6 is a low-alloy chromium-molybdenum air-hardening tool steel with a combination of toughness, strength,and wear resistance that makes it an excellent choice for general-purpose cold work tools and dies. Because of its low austenitizing temperature and air-hardening characteristics, **A6** has excellent dimensional stability.

Heat-Treatment

Annealing	13650˚ F to 1375˚ F, slow furnace-cool, Brinell hardness 229 max., Preheating
Hardening	1525˚ F to 1600˚ F, air-quench to 150˚ F.
Tempering	300˚ F to 800˚ F, average hardness after heat-treatment– Rockwell C60-54.

Tops for Dimensional Stability–
Minimum distortion in treatment; expandes .001 in. / in. max.

AISI-D2
(High Carbon, High-Chrome)

Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Chromium	Vanadium	Mo.
1.50	0.50	12.00	1.00	1.00

D2 combines minimum size change during heat-treatment with the ultimate in wear-resistance. It is the oustanding cold-work tool and die steel for maximum production. Excels in long wear and edge-holding ability.

Heat-Treatment

Annealing	1650˚ F, furnace-cool, Brinell 217 max.
Preheating	1200˚ F 1250˚ F, prior to hardening.
Hardening	1850˚ F, air-quench to 150˚ F.
Tempering	900˚ to 960˚ F, for Rockwell C59-61. Double temper-second temper 50˚ lower than first.

D2 is air-hardening – it is safe in treatment, with unmatched dimensional stability, normally changing size .0005 in. / in. (+ or–)

A-HT
(Titanium-Tungsten)
COLD WORK TOOL STEEL

Annealed

TYPICAL ANALYSIS

Carbon	Chromium	Mo.	Vanadium	Tungsten	Titanium
1.00	3.00	1.10	0.25	1.05	1.00

A-HT is an air-hardening tool steel similar to **A-2** in heat-treatment characteristics but with greatly increased wear-resistance. Additions of titanium and tungsten produce hard, long-wearing carbides which hold cutting edges, decrease galling and reduce metal pick-up.

Heat-Treatment

Forging	2000˚ F to 2050˚ F, stop at 1700˚ F, cool slowly.
Normalizing	Do not normalize.
Annealing	1650˚ F, furnace-cool, Brinell 212 max.
Preheating	1200˚ F, prior to hardening.
Hardening	1775˚ F, air-quench to 150˚ F.
Tempering	350˚ F to 400˚ F, resulting hardness – Rockwell C59-60.

SHOCK-RESISTING TOOL STEELS

These steels are designed to absorb shock or impact energy. They are used in applications where the ability to withstand repeated blows at normal operating temperatures is more important than the ability to resist abrasion. Applications include hand and pneumatic tools for chipping, punching, and battering, shear blades, swaging dies and forming tools.

AISI-S2

Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Silicon	Molybdenum
0.50	0.40	1.00	0.50

S2 is a water hardening alloy steel of extreme toughness. Even at Rc 59/60, it will bend before it breaks. When hardened in medium and large size pieces, **S-2** acquires a hard case and a tough core.The extreme toughness of this tool steel makes it suitable for use in many applicaitons where no other tool steel will hold up.

(continued on following page)

SHOCK-RESISTING TOOL STEELS
(continued from preceding page)

AISI-S2
Heat-Treatment

Annealing	1400˚ F, cool slowly. Brinell 202 max.
Hardening	1550˚ F, 5%-10% brine solution.
Tempering	300˚ F, average hardness Rockwell C-59/60.

Dimensional Stability – S-2 is not suitable for use in tools and dies which require extreme accuracy during hardening.

AISI-S5
Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Silicon	Mo.
0.55	0.80	2.00	0.40

S5 is a shock-resisting tool steel combining great ductility with hardness. It is an outstanding steel for cold-battering and shock applications at normal temperatures.

Heat-Treatment

Annealing	1450˚ F, furnace-cool, Brinell 229 max.
Hardening	1625˚ F, oil-quench; 1550˚ F, water-quench.
Tempering	400˚ F to 650˚ F, Rockwell C-60-50.

Dimensional stability – Where minimum distortion is of primary importance always oil-quench rather than water-quench. **S5** can be expected to expand .002 inch per inch (plus).

AISI-S7
(Generall-Purpose, Air-Hardening Shock Steel)
Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Chromium	Mo.
0.50	0.70	3.25	1.40

S7 is an outstanding grade of air-hardening, shock-resisting tool steel. Because of its air-hardening characteristics it has minimum distortion in heat-treatment. **S7** also has great toughness, deep hardenability, and excellent machinability.

Heat-Treatment

Annealing	1500˚ F to 1550˚ F, cool slowly to 1000˚ F, air-cool (Brinell 197 max.).
Preheating	1200˚ F to 1300˚ F, prior to hardening.
Hardening	1725˚ F, quench in air if section is of 2½" diameter or smaller. Sections over 2½" and up to 6" diameter should be oil-quenched until black (1000˚ F.) followed by air-cooling to 150˚ F. For massive sections larger than 6", it is advisable to oil-quench until the piece reaches 150˚ F; then temper immediately.
Tempering	400˚ F minimum. Double-temper oil-quenched masses. **S7** is air-hardening for ease and safety of heat-treatment. It expands .001 in. / in. max. (tempered at 400˚ F).

HOT-WORK TOOL STEELS

These steels are designed to resist abrasion and washing action. They have excellent shock resistance. In addition they have enough red hardness to retain their properties at high operating temperatures. Applications include dies for hot metalworking (shearing, forming, punching, extruding, and trimming), dummy blocks, and mandrels.

VISCOUNT 44-PH
Pre-Hardened (Rc42-46)

TYPICAL ANALYSIS

Carbon	Silicon	Manganese	Chromium	Mo.	Vanadium
0.40	1.00	.80	5.25	1.35	1.00

Viscount 44 is a Hotwork pre-hardened 200,000 PSI, "Ready to Use" H13 machinable steel for difficult engineering and maintenance applications. Machinable and weldable, this unique tool steel cuts downtime and bypasses costly heat treating operations. It also eliminates size change and distortion risks involved in heat treating. Ideal for prototypes.

AISI-H13
(Chrome - Moly - High Vanadium)
Annealed

TYPICAL ANALYSIS

Carbon	Chromium	Mo.	Vanadium
0.35	5.00	1.25	1.00

In some applications, H13 exhibits greater abrasion resistance and less heat-checking than the low vanadium hot work grades. It is widely accepted for use in aluminum die-casting and for plastic molding applications

Heat-Treatment

Annealing	1600˚ F, furnace-cool, average Brinell 207.
Preheating	1500˚ F, soak before heating, for hardening.
Hardening	1850˚ F, air-quench.
Tempering	1050˚ F to 1200˚ F, average Rockwell C47-40.

HIGH-SPEED TOOL STEELS

These steels are specially designed to maintain high hardness at elevated temperatures (red hardness), with sufficient abrasive and shock-resisting properties for good cutting characteristics. Applications include cutting tools for lathes, shapers, boring mills and other cutting machines, broaches, drills, and special dies

AISI-M1	**AISI-M7**	**AISI T2**
AISI-M2	**AISI-M10**	**AISI-T4**
AISI-M3-1	**AISI-M42**	**AISI-T5**
AISI-M3-2	**AISI-T1**	**AISI-T8**
AISI-M4		**AISI-T15**

SPECIAL PURPOSE TOOL STEELS

AISI-L6
(Oil Hardening)

Annealed

TYPICAL ANALYSIS

Carbon	Chromium	Mo.	Nickel
0.70	0.75	0.25	1.50

L6 is a low-alloy oil-hardening tool steel. It is a general-purpose grade for cold-work tools and dies. Because of its somewhat lower carbon content it has slightly better toughness with a corresponding loss in wear-resistance.

Dimensional Stability – When properly quenched, this grade may be expected to expand .0015 in. per in. of greatest cross section.

BRAKE-DIE

Heat-treated and low-annealed – Brinell 262/311.

TYPICAL ANALYSIS

Carbon	Mn.	Chromium	Mo.
.050	0.90	1.00	0.20

Brake-Die is a special analysis steel designed to give the high compressive strength, wear-resistance, and toughness needed in brake die operations. These properties also make it ideal for short-run tools and dies, support tooling, and machine parts. Brake-Die is generally used without further heat-treatment.

ADVANTAGES

Heat-treated to Brinell 262-311, ready to use, needs no further hardening.
Heat-treated to the right hardness for balanced wear and toughness.
Machines easily without warping – due to stress-relief treatment.
Machines to a smooth surface without grinding.

HEAT TREATED TOOLING PLATE

MARSHALLOY PH TOOLING PLATE

Heat Treated-BHN 261/321

TYPICAL ANALYSIS

	Carbon	Mn	Chromium	Mo.
¼" thru 3"	.38 - .43	.75 - 1.00	0.80 - 1.10	.15 - 0.25
3½" thru 6"	.28 - .33	.40 - 0.60	0.80 - 1.10	.15 - 0.25

Marshalloy PH is an electric furnace Vacuum degassed, cross-rolled pre-hardened alloy steel ready for use and is machinable in its hardened state – 261/321 Brinell. Machinability – 85% of 1.00 carbon steel. Finish – Blanchard ground top and bottom, plus .020 / .035". Edges – sawed cut, plus 1/8", minus .000". Length – 72" plus. Material can be flame-hardened at wear points to approximately 50/55 Rc.

TOOL STEELS FOR PLASTICS MOLDING

For Machined Cavities:

AISI-P20 Prehardened AISI-420 Stainless AISI-S7

AISI-P20
Pre-hardened

TYPICAL ANALYSIS

Carbon	Mn.	Silicon	Chromium	Mo.
0.35	0.80	0.50	1.70	0.45

P-20 is a chrome-moly tool steel made specifically to fill the requirements for the machined cavities and forces used in zinc die casting and plastic molding. It is delivered fully quenched and tempered to approximately Brinell 300. Other hardness levels may be obtained through additional heat treatment.

AISI-420 STAINLESS

Annealed

TYPICAL ANALYSIS

Carbon	Mn.	Silicon	Chromium
0.37	0.40	0.40	13.00

AISI-420 Stainless is intended for application to machined-cavity, plastic molds. Combining high hardness with good corrosion resistance, it is suitable for injection or compression molding.

The above mold steels as well as a full line of tool steels, including Deluxe, decarb-free squares and flats, ground flat stock, drill rod, and hollow-bar, are stocked for immediate shipment.

TOOL STEEL HOLLOW-BAR

AISI-01
(Oil-Hardening)

Annealed

TOLERANCES

O.D. plus or minus 1/16" I.D. plus or minus 1/32"

01 Hollow-Bar is the standard anaysis of **01** produced in hollow-bar form by high-speed trepanning. It is suitable for general-purpose tools and dies of circular form, support rings, and ring gauges.

AISI-A2
(5% Chrome Air-Hardening)

Annealed

TOLERANCES

O.D. plus or minus 1/16" I.D. plus or minus 1/32"

A2 is a medium-alloy, air-hardening tool steel produced in hollow-bar form by high-speed trepanning. It is safer-hardening and has less distortion in heat-treatment than the oil-hardening grades. It also has increased wear-resistance and greater hardenability.

AISI-D2
(High Carbon, High Crome)

Annealed

TOLERANCES

O.D. plus or minus 1/16" I.D. plus or minus 1/32"

D2 Hollow-Bar is the standard analysis of AISI-D2 produced in hollow-bar form by high-speed trepanning. It is suitable for maximum-production tools and dies of circular form, as well as drawing dies and ring gauges.

01 GROUND AND POLISHED DRILL ROD

ROUNDS

Oil Hardening – AISI 01

DRILL ROD IS. . . . . a high accuracy, ready-to-use tool steel available off-the-shelf in 210 standard diameters. Surfaces are ground to a finish of better than 40 micro inches and are free from defects and decarburization.

3' STOCK LENGTHS
12' LENGTHS AVAILABLE ON SPECIAL ORDER

Size	Decimal	Weight Pounds per 3 Foot	Size	Decimal	Weight Pounds per 3 Foot	Size	Decimal	Weight Pounds per 3 Foot
			7/8	.875	6.126	N	.302	.726
2	2.000	32.04	55/64	.8593	5.910	19/64	.2968	.702
1 15/16	1.9375	30.06	27/32	.8437	5.688	M	.295	.699
1 7/8	1.875	28.14	53/64	.8281	5.484	L	.290	.675
1 13/16	1.8125	26.31	13/16	.8125	5.250	9/32	.2812	.639
1 3/4	1.750	24.51	51/64	.7968	5.124	K	.281	.636
1 11/16	1.6875	22.80	25/32	.7812	4.875	J	.277	.615
1 5/8	1.625	21.15	49/64	.7656	4.686	I	.272	.594
1 9/16	1.5625	19.56	3/4	.750	4.500	H	.266	.564
1 1/2	1.5000	18.00	47/64	.7343	4.314	17/64	.2656	.561
1 31/64	1.4843	17.637	23/32	.7187	4.125	G	.261	.543
1 15/32	1.4687	17.259	45/64	.7031	3.936	F	.257	.522
1 29/64	1.4531	16.905	11/16	.6875	3.750	E	.250	.501
1 7/16	1.4375	16.536	43/64	.6718	3.561	1/4	.250	.501
1 27/64	1.4218	16.182	21/32	.6562	3.435	D	.246	.483
1 13/32	1.4062	15.822	41/64	.6406	3.312	C	.242	.462
1 25/64	1.3906	15.480	5/8	.625	3.126	B	.238	.450
1 3/8	1.375	14.147	39/64	.6093	3.000	15/64	.2343	.441
1 23/64	1.3593	14.793	19/32	.5937	2.811	A	.234	.441
1 11/32	1.3437	14.445	37/64	.5781	2.673	1	.227	.414
1 21/64	1.3281	14.121	9/16	.5625	2.532	2	.219	.387
1 5/16	1.3125	13.800	35/64	.5468	2.391	7/32	.2187	.387
1 19/64	1.2968	13.464	17/32	.5312	2.250	3	.212	.363
1 9/32	1.2812	13.122	33/64	.5156	2.127	4	.207	.345
1 17/64	1.2656	12.822	1/2	.500	2.001	5	.204	.327
1 1/4	1.250	12.501	31/64	.4843	1.875	13/64	.2031	.327
1 15/64	1.2343	12.198	15/32	.4687	1.749	6	.201	.321
1 7/32	1.2187	11.898	29/64	.4531	1.626	7	.199	.318
1 13/64	1.2031	11.586	7/16	.4375	1.530	8	.197	.312
1 3/16	1.1875	11.313	27/64	.4218	1.416	9	.194	.297
1 11/64	1.1718	10.992	Z	.413	1.374	10	.191	.288
1 5/32	1.1562	10.695	13/32	.4062	1.311	11	.188	.282
1 9/64	1.1406	10.416	Y	.404	1.281	3/16	.1875	.282
1 1/8	1.125	10.125	X	.397	1.263	12	.185	.276
1 7/64	1.1093	9.852	25/64	.3906	1.221	13	.182	.267
1 3/32	1.0937	8.582	W	.386	1.200	14	.180	.261
1 5/64	1.0781	9.303	V	.377	1.149	15	.178	.255
1 1/16	1.0625	9.030	3/8	.375	1.125	16	.175	.246
1 3/64	1.0468	8.760	U	.368	1.086	17	.172	.237
1 1/32	1.0312	8.499	23/64	.3593	1.032	11/64	.1718	.234
1 1/64	1.0156	8.247	T	.358	1.026	18	.168	.228
1	1.000	7.998	S	.348	.975	19	.164	.216
63/64	.9843	7.749	11/32	.3437	.939	20	.161	.207
31/32	.9687	7.593	R	.339	.924	21	.157	.198
61/64	.9531	7.248	Q	.332	.882	5/32	.1562	.198
15/16	.9375	6.999	21/64	.3281	.861	22	.155	.195
59/64	.9218	6.786	P	.323	.831	23	.153	.189
29/32	.9062	6.564	O	.316	.813	24	.151	.183
57/64	.8906	6.354	5/16	.3125	.780	25	.148	.177

(Continued on following page)

01 GROUND AND POLISHED DRILL ROD

ROUNDS

Oil Hardening – AISI- 01

(Continued from preceding page)

Size	Decimal	Weight Pounds per 3 Foot	Size	Decimal	Weight Pounds per 3 Foot	Size	Decimal	Weight Pounds per 3 Foot
26	.146	.171	44	.085	.057	63	.036	.0105
27	.143	.165	45	.081	.054	64	.035	.0099
9/64	.1406	.156	46	.079	.051	65	.033	.0087
28	.139	.156	5/64	.0781	.051	66	.032	.0081
29	.134	.144	47	.077	.048	1/32	.0312	.0078
30	.127	.129	48	.075	.045	67	.031	.0075
1/8	.125	.126	49	.072	.042	68	.030	.0072
31	.120	.117	50	.069	.039	69	.029	.0069
32	.115	.108	51	.066	.036	70	.027	.0060
33	.112	.102	52	.063	.033	71	.026	.0054
34	.110	.096	1/16	.0625	.030	72	.024	.0045
7/64	.1093	.093	53	.058	.027	73	.023	.0042
35	.108	.093	54	.055	.024	74	.022	.0039
36	.106	.090	55	.050	.021	75	.020	.0033
37	.103	.087	3/64	.0468	.018	76	.018	.0027
38	.101	.084	56	.045	.018	77	.016	.0021
39	.099	.078	57	.042	.015	1/64	.0156	.0021
40	.097	.075	58	.041	.0135	78	.015	.0018
41	.095	.072	59	.040	.0129	79	.014	.0015
3/32	.0937	.069	60	.039	.0120	80	.013	.0012
42	.092	.069	61	.038	.0114			
43	.088	.063	62	.037	.0111			

AISI-S7 DRILL ROD

To drill rod users we can offer drill rod with all the advantages of this great multi-purpose tool steel. It's air-hardening, for ease, safety, and stability in heat-treatment. It is commonly used in the range of Rc 56/58. It's machinable and for toughness, resistance to severe impact, you just can't beat **S7!**

3' STOCK LENGTHS
12' LENGTHS AVAILABLE ON SPECIAL ORDER

Size	Decimal	Weight Pounds per 3 Foot	Size	Decimal	Weight Pounds per 3 Foot	Size	Decimal	Weight Pounds per 3 Foot
1/8	.125	.126	11/32	.3437	.939	23/32	.7187	4.125
9/64	.1406	.156	23/64	.3594	1.032	3/4	.750	4.50
5/32	.1562	.198	3/8	.375	1.125	13/16	.8125	5.250
11/64	.1718	.234	25/64	.3906	1.221	7/8	.875	6.126
3/16	.1875	.282	7/16	.4375	1.530	15/16	.9375	6.999
13/64	.2031	.327	1/2	.500	2.001	1	1.000	7.998
7/32	.2187	.387	17/32	.5312	2.250	1 1/8	1.125	10.125
1/4	.250	.501	9/16	.5625	2.532	1 1/4	1.250	12.501
9/32	.2812	.639	5/8	.625	3.126	1 3/8	1.375	15.147
19/64	.2968	.702	21/32	.6562	3.435	1 1/2	1.500	18.00
5/16	.3125	.780	11/16	.6875	3.750			

TOLERANCES
.124" dia. and Smaller: Plus or Minus .0003"
.124" to .499" dia.: Plus or Minus .0005"
.500" to 2.000" dia.: Plus or Minus .001"
These tolerances apply to all grades of Drill Rod.

GROUND AND POLISHED DRILL ROD

ROUNDS - AIR-HARDENING

A-2 (AISI-A1) 3 Ft. Stock Lengths			**D-2** (AISI-D2) 3 Ft. Stock Lengths		
Decimal	Fraction	Wt. per piece (lb.)	Decimal	Fraction	Wt. per piece (lb.)
.0625	1/16	.031	.0625	1/16	.030
.0781	5/64	.049	.0781	5/64	.051
.0937	3/32	.070	.0937	3/32	.069
.1094	7/64	.096	.1094	7/64	.093
.125	1/8	.125	.125	1/8	.126
.1406	9/64	.158	.1406	9/64	.156
.1562	5/32	.195	15.62	5/32	.198
.1718	11/64	.236	.1718	11/64	.234
.1875	3/16	.281	.1875	3/16	.282
.2031	13/64	.330	.2031	13/64	.327
.2187	7/32	.383	.2187	7/32	.387
.2343	15/64	.440	.2343	15/64	.441
.250	1/4	.500	.250	1/4	.501
.2656	17/64	.565	.2656	17/64	.561
.2812	9/32	.633	.2812	9/32	.639
.2968	19/64	.705	.2968	19/64	.702
.3125	5/16	.782	.3125	5/16	.780
.3281	21/64	.862	.3281	21/64	.861
.3437	11/32	.946	.3437	11/32	.939
.3593	23/64	1.034	.3493	23/64	1.032
.375	3/8	1.125	.375	3/8	1.125
.3906	25/64	1.221	.3906	25/64	1.221
.4062	13/32	1.321	.4062	13/32	1.311
.4218	27/64	1.424	.4218	27/64	1.416
.4375	7/16	1.532	.4375	7/16	1.530
.4531	29/64	1.643	.4531	29/64	1.626
.4687	15/32	1.758	.4687	15/32	1.749
.4843	31/64	1.877	.4843	31/64	1.875
.500	1/2	2.000	.500	1/2	2.001
.5312	17/32	2.258	.5312	17/32	2.250
.5625	9/16	2.532	.5625	9/16	2.532
.5937	19/32	2.821	.5937	19/32	2.811
.625	5/8	3.126	.625	5/8	3.126
.6562	21/32	3.446	.6562	21/32	3.435
.6875	11/16	3.782	.6875	11/16	3.750
.7187	23/32	4.134	.7187	23/32	4.125
.750	3/4	4.501	.750	3/4	4.500
.8125	13/16	5.282	.8125	13/16	5.250
.875	7/8	6.126	.875	7/8	6.126
.9375	15/16	7.033	.9375	15/16	7.000
1.000	1	8.002	1.000	1	8.000
1.0625	1 1/16	9.030	1.125	1 1/8	10.134
1.125	1 1/8	10.134	1.250	1 1/4	12.510
1.250	1 1/4	12.510	1.375	1 3/8	15.135
1.375	1 3/8	15.135	1.500	1 1/2	18.009
1.500	1 1/2	18.009			

AISI-O1 GROUND FLAT STOCK

Precision Ground Individually Paper Wrapped
Oil Hardening Non-Deforming Standard Sizes, 18 Inch Lengths

Thick-ness	Width (Inch)	Wt. per Piece
1/64 x	1/2	.04
	3/4	.06
	1	.08
	1 1/4	.10
	1 1/2	.12
	2	.16
	2 1/2	.20
	3	.24
	3 1/2	28
	4	32
1/32 x	1/2	.08
	3/4	.12
	1	.16
	1 1/4	.20
	1 1/2	.24
	1 3/4	.28
	2	.32
	2 1/2	.40
	3	.48
	3 1/2	.56
	4	.64
	5	.80
	6	.95
	8	1.27
3/64 x	1/4	.06
	5/16	.08
	3/8	.09
	1/2	.12
	3/4	.18
	1	.24
	1 1/4	.30
	1 1/2	.36
	1 3/4	.42
	2	.48
	2 1/2	.60
	3	.72
	4	.95
	5	1.19
	6	1.43
	8	1.91
1/16 x	1/4	.08
	5/16	.10
	3/8	.12
	1/2	.16
	3/4	.24
	1	.32
	1 1/4	.40
	1 1/2	.48
	1 3/4	.56
	2	.64
	2 1/2	.80
	3	.96
	3 1/2	1.12
	4	1.27

Thick-ness	Width (Inch)	Wt. per Piece
1/16 x	4 1/2	1.43
	5	1.59
	6	1.91
	8	2.55
	10	3.19
5/64 x	1/4	.10
	5/16	.12
	3/8	.15
	1/2	.20
	3/4	.30
	1	.40
	1 1/4	.50
	1 1/2	.60
	2	.80
	2 1/2	1.00
	3	1.20
	3 1/2	1.40
	4	1.60
	5	2.00
	6	2.40
3/32 x	1/4	.12
	5/16	.15
	3/8	.18
	1/2	.24
	3/4	.36
	1	.48
	1 1/4	.60
	1 1/2	.72
	1 3/4	.84
	2	.96
	2 1/2	1.19
	3	1.43
	3 1/2	1.67
	4	1.91
	5	2.39
	6	2.87
	8	3.82
	10	4.78
7/64 x	1/2	.28
	3/4	.42
	1	.56
	1 1/4	.70
	1 1/2	.84
	1 3/4	.96
	2	1.12
	2 1/2	1.40
	3	1.68
	4	2.23
	5	2.79
	6	3.35
	8	4.46
1/8 x	1/4	.16
	5/16	.20
	3/8	.24

Thick-ness	Width (Inch)	Wt. per Piece
1/8 x	1/2	.32
	5/8	.40
	3/4	.48
	1	.64
	1 1/4	.80
	1 1/2	.96
	1 3/4	1.10
	2	1.27
	2 1/2	1.59
	3	1.91
	3 1/2	2.23
	4	2.55
	4 1/2	2.87
	5	3.19
	6	3.82
	7	4.46
	8	5.10
	10	6.38
	12	7.65
	14	8.93
9/64 x	1/2	.36
	3/4	.54
	1	.72
	1 1/4	.90
	1 1/2	1.08
	2	1.44
	3	2.16
	4	2.87
	6	4.30
5/32 x	1/4	.20
	5/16	.25
	3/8	.30
	1/2	.40
	3/4	.60
	1	.80
	1 1/4	1.00
	1 1/2	1.19
	1 3/4	1.39
	2	1.59
	2 1/2	1.99
	3	2.39
	3 1/2	2.79
	4	3.19
	5	3.98
	6	4.78
	8	6.37
3/16 x	1/4	.24
	5/16	.30
	3/8	.36
	1/2	.48
	3/4	.72
	1	.96
	1 1/4	1.20
	1 1/2	1.43

(continued on following page)

AISI-O1 GROUND FLAT STOCK

Precision Ground Individually Paper Wrapped
Oil Hardening Non-Deforming Standard Sizes, 18 Inch Lengths

(Continued from preceding page)

Thickness	Width (Inch)	Wt. per Piece
3/16 x	1¾	1.67
	2	1.91
	2½	2.39
	3	2.87
	3½	3.35
	4	3.82
	4½	4.30
	5	4.78
	6	5.74
	8	7.64
	10	9.56
	12	11.47
7/32 x	½	.56
	¾	.84
	1	1.12
	1¼	1.39
	1½	1.67
	2	2.23
	2½	2.79
	3	3.35
	4	4.46
	6	6.69
	8	8.93
¼ x	5/16	.40
	⅜	.48
	½	.64
	¾	.96
	1	1.27
	1¼	1.59
	1½	1.91
	1¾	2.23
	2	2.55
	2½	3.19
	3	3.82
	3½	4.46
	4	5.10
	4½	5.74
	5	6.37
	5½	7.01
	6	7.65
	7	8.93
	8	10.20
	10	12.75
	12	15.30
	14	17.85
9/32 x	5/16	.45
	⅜	.54
	½	.72
	¾	1.08
	1	1.43
	1¼	1.79
	1½	2.15
	1¾	2.51
	2	2.87
9/32 x	2½	3.59
	3	4.30
	4	5.74
	6	8.60
5/16 x	⅜	.60
	½	.80
	¾	1.20
	1	1.59
	1¼	1.99
	1½	2.39
	1¾	2.79
	2	3.19
	2½	3.98
	3	4.78
	3½	5.58
	4	6.37
	4½	7.17
	5	7.97
	5½	8.77
	6	9.56
	7	11.16
	8	12.74
	10	15.94
	12	19.12
⅜ x	½	.96
	¾	1.43
	1	1.91
	1¼	2.39
	1½	2.87
	1¾	3.35
	2	3.82
	2½	4.78
	3	5.74
	3½	6.70
	4	7.65
	4½	8.61
	5	9.56
	5½	10.52
	6	11.47
	7	13.39
	8	15.30
	10	19.12
	12	22.94
	14	26.78
7/16 x	½	1.12
	¾	1.67
	1	2.23
	1¼	2.79
	1½	3.35
	2	4.46
	2½	5.58
	3	6.69
	4	8.93
	6	13.39
½ x	5/8	1.60
	¾	1.91
	1	2.55
	1¼	3.19
	1½	3.82
	1¾	4.46
	2	5.10
	2½	6.37
	3	7.65
	3½	8.92
	4	10.20
	4½	11.48
	5	12.75
	5½	14.03
	6	15.30
	7	17.85
	8	20.40
	10	25.50
	12	30.60
	14	35.70
9/16 x	¾	2.15
	1	2.87
	1¼	3.59
	1½	4.30
	2	5.74
	2½	7.17
	3	8.61
	3½	10.04
	4	11.48
5/8 x	¾	2.39
	1	3.19
	1¼	3.98
	1½	4.78
	1¾	5.58
	2	6.37
	2½	7.97
	3	9.56
	3½	11.16
	4	12.75
	5	15.94
	6	19.12
	7	22.32
	8	25.50
	10	31.88
	12	38.25
¾ x	1	3.82
	1¼	4.78
	1½	5.73
	1¾	6.69
	2	7.65
	2½	9.56
	3	11.47
	3½	13.39

(continued on following page)

AISI-O1 GROUND FLAT STOCK

Precision Ground Individually Paper Wrapped
Oil Hardening Non-Deforming Standard Sizes, 18 Inch Lengths

(Continued from preceding page)

Thickness	Width (Inch)	Wt. per Piece
¾ x	4	15.30
	4½	17.22
	5	19.12
	6	22.95
	7	26.78
	8	30.60
	10	38.25
	12	45.90
7/8 x	1	4.46
	1¼	5.58
	1½	6.69
	2	8.93
	2½	11.16
	3	13.39
	3½	15.61
	4	17.85
	6	26.78
1 x	1¼	6.38
	1½	7.65
	1¾	8.93
	2	10.20
1 x	2½	12.75
	3	15.30
	3½	17.85
	4	20.40
	4½	22.95
	5	25.50
	6	30.60
	8	40.80
	10	50.99
	12	61.20
1⅛ x	1½	8.61
	2	11.48
	3	17.22
	4	22.95
	6	34.43
1¼ x	1½	9.56
	2	12.75
	2½	15.95
	3	19.12
	3½	22.32
	4	25.50
	4½	28.70
1¼ x	5	31.87
	5½	35.07
	6	38.25
	7	44.63
	8	50.99
	10	63.74
1½ x	2	15.30
	2½	19.13
	3	22.95
	3½	26.78
	4	30.60
	5	38.26
	6	45.90
	8	61.20
	10	76.50
	12	91.80
2 x	3	30.60
	4	40.80
	6	61.20
2½ x	3	38.25
	4	51.00

Also available in 36" lengths and oversize tolerances.

AISI-O1 GROUND TOOL STEEL - SQUARE

Precision Ground
Standard Sizes, 18 Inch Lengths

Size (Inch)	Wt. per Piece	Size (Inch)	Wt. per Piece	Size (Inch)	Wt. per Piece	Size (Inch)	Wt. per Piece
7/64	.06	9/32	.40	9/16	1.61	1¼	7.95
⅛	.08	5/16	.50	⅝	1.99	1⅜	9.64
9/64	.10	11/32	.60	11/16	2.41	1½	11.50
5/32	.12	⅜	.72	¾	2.87	2	20.40
3/16	.18	13/32	.84	⅞	3.90	2½	31.88
13/64	.21	7/16	.98	1	5.10	3	45.90
7/32	.24	½	1.27	1⅛	6.45	4	81.60
¼	.32						

Also available in 36" lengths and oversize tolerances.

AISI-A2 GROUND FLAT STOCK

AIR HARDENING - 18” STOCK LENGTHS

Thickness	Width (Inch)	Wt. per Piece
1/16 x	1/2	.16
	3/4	.24
	1	.32
	1 1/4	.40
	1 1/2	.48
	2	.64
	2 1/2	.80
	3	.96
	4	1.27
3/32 x	1/2	.24
	3/4	.36
	1	.48
	1 1/4	.60
	1 1/2	.72
	2	.96
	2 1/2	1.19
	3	1.43
	4	1.91
1/8 x	1/2	.32
	3/4	.48
	1	.64
	1 1/4	.80
	1 1/2	.96
	2	1.27
	2 1/2	1.59
	3	1.91
	4	2.55
	5	3.19
	6	3.82
	7	4.46
	8	5.10
5/32 x	1/2	.40
	3/4	.60
	1	.80
	1 1/4	1.00
	1 1/2	1.19
	2	1.59
	2 1/2	1.99
	3	2.39
	3 1/2	2.79
	4	3.19
	5	3.98
	6	4.78
	7	5.58
	8	6.37
3/16 x	1/2	.48
	3/4	.72
	1	.96
	1 1/4	1.20
	1 1/2	1.43
	2	1.91
	2 1/2	2.39
	3	2.87
	3 1/2	3.35
	4	3.82
	5	4.78
3/16 x	6	5.74
	7	6.69
	8	7.64
1/4 x	1/2	.64
	3/4	.96
	1	1.27
	1 1/4	1.59
	1 1/2	1.91
	2	2.55
	2 1/2	3.19
	3	3.82
	3 1/2	4.46
	4	5.10
	4 1/2	5.74
	5	6.37
	6	7.65
	7	8.93
	8	10.20
	10	12.75
	12	15.30
5/16 x	1/2	.80
	3/4	1.20
	1	1.59
	1 1/4	1.99
	1 1/2	2.39
	2	3.19
	2 1/2	3.98
	3	4.78
	3 1/2	5.58
	4	6.37
	4 1/2	7.17
	5	7.97
	5 1/2	8.77
	6	9.56
	8	12.74
3/8 x	1/2	.96
	3/4	1.43
	1	1.91
	1 1/4	2.39
	1 1/2	2.87
	1 3/4	3.35
	2	3.82
	2 1/2	4.78
	3	5.74
	3 1/2	6.70
	4	7.65
	4 1/2	8.61
	5	9.56
	5 1/2	10.52
	6	11.47
	7	13.39
	8	15.30
	10	19.12
	12	22.94
7/16 x	1	2.23
	1 1/2	3.35
7/16 x	2	4.46
	2 1/2	5.58
	4	8.93
1/2 x	5/8	1.60
	3/4	1.91
	1	2.55
	1 1/4	3.19
	1 1/2	3.82
	1 3/4	4.46
	2	5.10
	2 1/2	6.37
	3	7.65
	3 1/2	8.92
	4	10.20
	4 1/2	11.48
	5	12.75
	5 1/2	14.03
	6	15.30
	7	17.85
	8	20.40
	10	25.50
	12	30.60
9/16 x	2	5.74
	2 1/2	7.17
	3	8.61
	3 1/2	10.04
	4	11.48
	4 1/2	12.91
	5	14.34
	5 1/2	15.78
	6	17.22
5/8 x	3/4	2.39
	1	3.19
	1 1/4	3.98
	1 1/2	4.78
	2	6.37
	2 1/2	7.97
	3	9.56
	3 1/2	11.16
	4	12.75
	4 1/2	14.34
	5	15.94
	5 1/2	17.54
	6	19.12
	7	22.32
	8	25.50
	10	31.88
3/4 x	1	3.82
	1 1/4	4.78
	1 1/2	5.73
	2	7.65
	2 1/2	9.56
	3	11.47
	3 1/2	13.39
	4	15.30
	4 1/2	17.22

(continued on following page)

AISI-A2 GROUND FLAT STOCK

AIR HARDENING - 18” STOCK LENGTHS

(Continued from preceding page)

Thickness	Width (Inch)	Wt. per Piece
3/4 x	5	19.12
	5 1/2	21.05
	6	22.95
	7	26.78
	8	30.60
	10	38.25
	12	45.90
7/8 x	1	4.46
	1 1/4	5.58
	1 1/2	6.69
	2	8.93
	2 1/2	11.16
	3	13.39
	3 1/2	15.61
	4	17.85
	4 1/2	20.09
	5	22.32
	5 1/2	24.54
	6	26.78
	7	31.25
	8	35.70
	10	44.63
1 x	1 1/4	6.38
	1 1/2	7.65
	2	10.20
	2 1/2	12.75
	3	15.30
	3 1/2	17.85
	4	20.40
	4 1/2	22.95
	5	25.50
	5 1/2	28.05
	6	30.60
	7	35.70
	8	40.80
1 x	10	50.99
	12	61.20
1 1/8 x	2	11.48
	2 1/2	14.34
	3	17.22
	3 1/2	20.09
	4	22.95
	4 1/2	25.82
	5	28.70
	5	31.56
	6	34.43
1 1/4 x	1 1/2	9.56
	2	12.75
	2 1/2	15.95
	3	19.12
	3 1/2	22.32
	4	25.50
	4 1/2	28.70
	5	31.87
	5 1/2	35.07
	6	38.25
	7	44.63
	8	50.99
	10	63.74
	12	76.50
1 3/8 x	2	14.03
	2 1/2	17.54
	3	21.05
	3 1/2	24.54
	4	28.05
	4 1/2	31.56
	5	35.07
	5	38.57
	6	42.08
1 1/2 x	2	15.30
	2 1/2	19.13
	3	22.95
	3 1/2	26.78
	4	30.60
	4 1/2	34.43
	5	38.26
	5 1/2	42.08
	6	45.90
	7	53.55
	8	61.20
	10	76.50
	12	91.80
	14	107.10
2 x	2 1/2	25.50
	3	30.60
	3 1/2	35.70
	4	40.80
	6	61.20
	8	81.60

SQUARES

Size (Inch)	Wt. per Piece
1/2	1.27
5/8	1.99
3/4	2.87
7/8	3.90
1	5.10
1 1/4	7.95
1 1/2	11.50
2	20.40
2 1/2	31.88

Also available in 36” lengths and oversize tolerances.

AISI-D2 GROUND FLAT STOCK

High Carbon - High Chrome - Air Hardening - 18” Stock Lengths
Ground Oversizxe to: .010” to .015” on Thickness and Width

Thickness	Width (Inch)	Wt. per Piece
1/8 x	1/2	.32
	3/4	.48
	1	.64
	1 1/4	.80
	1 1/2	.96
	2	1.27
	2 1/2	1.59
	3	1.91
	3 1/2	2.23
	4	2.55
	6	3.82
5/32 x	1/2	.40
	3/4	.60
	1	.80
	1 1/4	1.00
	1 1/2	1.19
	2	1.59
	2 1/2	1.99
	3	2.39
	6	4.78
3/16 x	1/2	.48
	3/4	.72
	1	.96
	1 1/4	1.20
	1 1/2	1.43
	1 3/4	1.67
	2	1.91
	2 1/2	2.39
	3	2.87
	3 1/2	3.35

(continued on following page)

AISI-D2 GROUND FLAT STOCK

High Carbon – High Chrome - Air Hardening - 18” Stock Lengths
Ground Oversize to: .010” to .015” on Thickness and Width

(Continued from preceding page)

Thickness	Width (Inch)	Wt. per Piece
3/16 x	4	3.82
	5	4.78
	5½	5.26
	6	5.74
¼ x	½	.64
	¾	.96
	1	1.27
	1¼	1.59
	1½	1.91
	1¾	2.23
	2	2.55
	2½	3.19
	3	3.82
	3½	4.46
	4	5.10
	5	6.37
	6	7.65
5/16 x	½	.80
	¾	1.20
	1	1.59
	1¼	1.99
	1½	2.39
	2	3.19
	2½	3.98
	3	4.78
	4	6.37
⅜ x	½	.96
	¾	1.43
	1	1.91
	1¼	2.39
	1½	2.87
	2	3.82
	2½	4.78
	3	5.74
⅜ x	4	7.65
	5	9.56
	6	11.47
7/16 x	1	2.23
	1½	3.35
	2	4.46
	2½	5.58
	3	6.69
	3½	7.81
	4	8.93
½ x	¾	1.91
	1	2.55
	1¼	3.19
	1½	3.82
	2	5.10
	2½	6.37
	3	7.65
	3½	8.92
	4	10.20
	5	12.75
	6	15.30
9/16 x	1	2.87
	2	5.74
⅝ x	1	3.19
	1½	4.78
	2	6.37
	2½	7.97
	3	9.56
	4	12.75
	1	3.82
	1¼	4.78
	1½	5.73
¾ x	2	7.65
	2½	9.56
	3	11.47
	4	15.30
	6	22.95
⅞ x	2	8.93
	2½	11.16
	3	13.39
1 x	1¼	6.38
	1½	7.65
	2	10.20
	3	15.30
	4	20.40
1¼ x	2	12.75
	3	19.12
	4	25.50
1½ x	2	15.30
	3	22.65
	4	30.60

SQUARES

Size (Inch)	Wt. per Piece
¼	.32
½	1.27
⅝	1.99
¾	2.87
⅞	3.90
1	5.10
1¼	7.95
1½	11.50
2	20.40

Also available in 36” lengths.

AISI-S7 GROUND FLAT STOCK

Shock-Resisting Air Hardening – 36” Stock Lengths
Ground Oversize to: .010” to .015” on Thickness and Width

Thickness	Width (Inch)	Wt. per 3 Ft.
⅛ x	½	.64
	¾	.96
	1	1.28
	1¼	1.60
⅛ x	1½	1.92
	2	2.54
	2½	3.18
	3	3.82
⅛ x	3½	4.46
	4	5.10
	5	6.38

(continued on following page)

AISI-S7 GROUND FLAT STOCK

Shock-Resisting Air Hardening – 36” Stock Lengths
Ground Oversize to: 0.10” to .015” on Thickness and Width

(Continued from preceding page)

Thickness	Width (Inch)	Wt. per 3 Ft.
3/16 x	¾	1.44
	1	1.92
	1¼	2.40
	1½	2.86
	2	3.82
	3	5.74
	4	7.64
¼ x	¾	1.92
	1	2.54
	1¼	3.18
	1½	3.82
	1¾	4.46
	2	5.10
	2½	6.38
	3	7.64
¼ x	3½	8.92
	4	10.20
	4½	11.48
	5	12.74
	6	15.30
5/16 x	1	3.18
	1¼	3.98
	1½	4.78
	2	6.38
	3	9.56
	4	12.74
	6	19.12
⅜ x	⅜	1.44
	1	3.82
	1¼	4.78
⅜ x	1½	5.74
	1¾	6.70
	2	7.64
	2½	9.56
	3	11.48
	4	15.30
	5	19.12
	6	22.94
7/16 x	1	4.46
	1¼	5.58
	2	8.92
	2½	11.16
	3	13.38
	4	17.86
	6	26.78

Also available in 18’ lengths.

AISI-A6 GROUND FLAT STOCK

Low Temperature Air Hardening – 36” Stock Lengths
Ground Oversize to: .010” to .015” on Thickness and Width

Thickness	Width (Inch)	Wt. per 3 Ft.
⅛ x	½	.64
	¾	.96
	1	1.28
	1½	1.92
	2	2.54
	2½	3.18
	3	3.82
	3½	4.46
	4	5.10
	6	7.64
3/16 x	½	.96
	¾	1.44
	1	1.92
	1¼	2.40
	1½	2.86
	2	3.82
	3	5.74
	4	7.64
	6	11.48
¼ x	½	1.28
	¾	1.92
	1	2.54
	1¼	3.18
¼ x	1½	3.82
	2	5.10
	2½	6.38
	3	7.64
	4	10.20
	5	12.74
	6	15.30
	8	20.40
5/16 x	5/16	1.00
	½	1.60
	¾	2.40
	1	3.18
	1½	4.78
	2	6.38
	2½	7.96
	3	9.56
	4	12.74
	5	15.94
	6	19.12
⅜ x	⅜	1.44
	½	1.92
	1¾	2.86
	1	3.82
⅜ x	1½	5.74
	2	7.64
	2½	9.56
	3	11.48
	4	15.30
	5	19.12
	6	22.94
	8	30.60
½ x	½	2.54
	¾	3.82
	1	5.10
	1½	7.64
	2	10.20
	2½	12.74
	3	15.30
	4	20.40
	5	25.50
	6	30.60
	8	40.80
⅝ x	⅝	3.98
	¾	4.78
	1	6.38
	1½	9.56

(continued on following page)

LC (LOW CRBON) GROUND FLAT STOCK

SAE Type C-1018 – Fine Grained Silicon Killed
STOCK LENGTH: 24 Inches

Thick-ness	Width (Inch)	Wt. per Piece
1/16 x	1/2	.21
	3/4	.32
	1	.42
	1 1/4	.53
	1 1/2	.64
	2	.85
	2 1/2	1.06
	3	1.28
	3 1/2	1.49
	4	1.70
	5	2.12
	6	2.55
	8	3.40
	10	4.27
	12	5.10
3/32 x	1/2	.32
	3/4	.47
	1	.63
	1 1/4	.79
	1 1/2	.95
	2	1.26
	2 1/2	1.58
	3	1.90
	3 1/2	2.21
	4	2.53
	5	3.16
	6	3.79
	8	5.06
	10	6.32
	12	7.59
1/8 x	1/2	.43
	3/4	.64
	1	.85
	1 1/4	1.06
	1 1/2	1.28
	2	1.70
	2 1/2	2.12
	3	2.56
	3 1/2	2.98
	4	3.40
	5	4.26
	6	5.10
	8	6.80
	10	8.50
	12	10.20

Thick-ness	Width (Inch)	Wt. per Piece
5/32 x	1/2	.53
	3/4	.80
	1	1.05
	1 1/4	1.33
	1 1/2	1.60
	2	2.13
	2 1/2	2.65
	3	3.20
	3 1/2	3.73
	4	4.25
	5	5.30
	6	6.38
	8	8.50
	10	10.68
	12	12.75
3/16 x	1/2	.64
	3/4	.96
	1	1.28
	1 1/4	1.59
	1 1/2	1.91
	2	2.56
	2 1/2	3.18
	3	3.82
	3 1/2	4.46
	4	5.10
	5	6.38
	6	7.66
	8	10.20
	10	12.76
	12	15.30
1/4 x	1/2	.85
	3/4	1.27
	1	1.70
	1 1/4	2.12
	1 1/2	2.56
	2	3.40
	2 1/2	4.24
	3	5.10
	3 1/2	5.96
	4	6.80
	5	8.50
	6	10.20
	8	13.60
	10	17.00
	12	20.40

Thick-ness	Width (Inch)	Wt. per Piece
5/16 x	1/2	1.06
	3/4	1.59
	1	2.12
	1 1/4	2.66
	1 1/2	3.18
	2	4.24
	2 1/2	5.30
	3	6.38
	3 1/2	7.44
	4	8.50
	5	10.62
	6	12.76
	7	14.88
	8	17.00
	9	19.12
	10	21.24
	12	25.50
3/8 x	1/2	1.28
	3/4	1.91
	1	2.56
	1 1/4	3.18
	1 1/2	3.84
	2	5.10
	2 1/2	6.38
	3	7.66
	3 1/2	8.94
	4	10.20
	5	12.76
	6	15.30
	7	17.86
	8	20.40
	9	22.96
	10	25.50
	12	30.60
1/2 x	3/4	2.55
	1	3.40
	1 1/4	4.24
	1 1/2	5.10
	2	6.80
	2 1/2	8.50
	3	10.20
	3 1/2	11.90
	4	13.60
	5	17.00
	6	20.40
	7	23.80
	8	27.20
	9	30.60
	10	34.00
	12	40.80

(continued on following page)

LC (LOW CARBON) GROUND FLAT STOCK

SAE Type C-1018 – Fine Grained Silicon Killed
SOTCK LENGTH: 24 Inches

Thick-ness	Width (Inch)	Wt. per Piece
5/8 x	3/4	3.19
	1	4.24
	1 1/4	5.30
	1 1/2	6.38
	2	8.50
	2 1/2	10.62
	3	12.76
	3 1/2	14.88
	4	17.00
	5	21.26
	6	25.50
	7	29.74
	8	34.00
	9	38.26
	10	42.70
	12	50.99
3/4 x	1	5.10
	1 1/4	6.38
	1 1/2	7.66
	2	10.20
	2 1/2	12.76
	3	15.30
	3 1/2	17.86
	4	20.40
	5	25.50
	6	30.60
	7	35.70
	8	40.80
	9	45.92
	10	51.00
	12	61.19
7/8 x	1	5.95
	1 1/4	7.44
	1 1/2	8.92
	2	11.90
	2 1/2	14.87
	3	17.85
	3 1/2	20.82
	4	23.80
	5	29.75
	6	35.70
	7	41.65
	8	47.59
	9	53.54
	10	59.49
	12	61.39

Thick-ness	Width (Inch)	Wt. per Piece
1 x	1 1/4	8.50
	1 1/2	10.20
	2	13.60
	2 1/2	17.00
	3	20.40
	3 1/2	23.80
	4	27.20
	5	34.00
	6	40.80
	7	47.60
	8	54.40
	9	61.20
	10	68.00
	12	81.59
1 1/4 x	1 1/2	12.76
	2	17.00
	2 1/2	21.26
	3	25.50
	3 1/2	29.74
	4	34.00
	5	42.50
	6	51.00
	7	59.50
	8	68.00
	9	76.52
	10	85.00
	12	101.99
	14	119.70
	16	136.80
1 1/2 x	2	20.40
	2 1/2	25.50
	3	30.60
	3 1/2	35.70
	4	40.80
	5	51.00
	6	61.20
	7	71.40
	8	81.60
	9	91.80
	10	102.00
	12	122.39
	14	143.64
	16	164.16

SQUARES

Size (Inch)	Wt. per Piece
3/16	.24
1/4	.43
5/16	.66
3/8	.96
7/16	1.30
1/2	1.70
9/16	2.16
5/8	2.66
11/16	3.22
3/4	3.83
13/16	4.48
7/8	5.20
15/16	5.98
1	6.80
1 1/16	7.68
1 1/8	8.60
1 3/16	9.60
1 1/4	10.62
1 5/16	11.72
1 3/8	12.86
1 7/16	14.06
1 1/2	15.30
1 9/16	16.60
1 7/8	23.90
2	27.20
2 1/4	34.42
2 3/8	38.36
2 1/2	42.50
2 7/8	56.20

Standard Manufacturing Tolerances – Ground Flat Stock

PRECISION GROUND **Tolerances**

Flats: Thickness 1¼" & Smaller. . . . . +.001" or -.001"
Over 1¼". . . . . +.002" or -.002"
Width all sizes. . . . . +.005" or -.000"

Squares: Thickness 1¼" & Smaller. . . . . +.001" or -.001"
Over 1¼". . . . . +.002" or -.002"

OVERSIZE GROUND **Tolerances**

Thickness 1 1/4" & Smaller. . . . . +.010" or +.015"
Width . . . . . .+.010" or +.015"

SPECIALS:

Non standard Precision Ground and Oversize Ground Flat Stock tolerances , lengths, widths, thickness, finish, and grades of steel are produced to your specification. Prices are quoted upon application.

NuTec42 GROUND FLAT STOCK

AISI 4142 Modified

NuTec42 is an AISI 4132 modified, pre-hardened alloy steel. It has a Brinnell range of 261 to 321. Rockwell hardness of approximately C30. It is normalized and tempered in a machineable condition of approximately 85% of a 1.00 carbon steel. NuTec42 can be flame hardened where a higher hardness is required. It has a tensile strength of approximately 140/155,000 PSI and a yield of approximately 95/100,000 PSI.

STANDARD 24" LENGTHS

Thick-ness	Width (Inch)	Wt. per Piece	Thick-ness	Width (Inch)	Wt. per Piece	Thick-ness	Width (Inch)	Wt. per Piece
⅛ x	¾	.64	¼ x	¾	1.27	⅜ x	¾	1.91
	1	.85		1	1.70		1	2.56
	1¼	1.06		1¼	2.12		1¼	3.18
	1½	1.28		1½	2.56		1½	3.84
	2	1.70		2	3.40		2	5.10
	2½	2.12		2½	4.24		2½	6.38
	3	2.56		3	5.10		3	7.66
	4	3.40		4	6.80		4	10.20
	5	4.26		5	8.50		5	12.76
	6	5.10		6	10.20		6	15.30
3/16 x	¾	.96	5/16	¾	1.59	½	¾	2.55
	1	1.28		1	2.12		1	3.40
	1¼	1.59		1¼	2.66		1¼	4.24
	1½	1.91		1½	3.18		1½	5.10
	2	2.56		2	4.24		2	6.80
	2½	3.18		2½	5.30		2½	8.50
	3	3.82		3	6.38		3	10.20
	4	5.10		4	8.50		4	13.60
	5	6.38		5	10.62		5	17.00
	6	7.66		6	12.73		6	20.40

Analysis

Carbon. 38/.46%
Manganese 70/1.0
Silicon 15/.30
Chromium 80/1.15
Molybdenum 15/.25
Vanadium . . . . . .03 Min.
Sulphur . . . . . 04 Max.
Phosphorous . . . . . 035 Max.

Tolerances

NuTec42 is ground to +.005-.000 on thickness with a Mattison finish. Widths are Blanchard ground to +.005-.000. Lengths are saw cut to 24 inches on the plus side. Each piece is individually wrapped and protected. Special sizes and tolerances are available on request.

Recommended Uses

NuTec42 is used for molds, slides, shims, maintenance and many other tooling uses. Applicatons where half hardness is satisfactory and outside heat treating and straightening are impractical and expensive.

LC (LOW CARBON) GROUND SQUARE PLATES

SAE Type C-1018 – Fine Grained Silicon Killed
STANDARD SIZES

Thickness (inch)	Size (inch)	Wt. per Piece	Thickness (inch)	Size (inch)	Wt. per Piece
¼ x	6 x 6	2.55	1 x	6 x 6	10.20
	8 x 8	4.54		8 x 8	18.16
	10 x 10	7.08		10 x 10	28.30
	12 x 12	10.20		12 x 12	40.80
	14 x 14	13.89		14 x 14	55.53
	16 x 16	18.13		16 x 16	72.53
	20 x 20	28.33		20 x 20	113.33
	24 x 24	40.80		24 x 24	163.20
⅜ x					
	6 x 6	3.82	1¼ x	6 x 6	12.78
	8 x 8	6.80		8 x 8	22.64
	10 x 10	10.60		10 x 10	35.40
	12 x 12	15.30		12 x 12	51.00
	14 x 14	20.82		14 x 14	69.42
	16 x 16	27.20		16 x 16	90.66
	20 x 20	42.50		20 x 20	141.66
	24 x 24	61.20		24 x 24	204.00
½ x	6 x 6	5.10	1½ x	6 x 6	15.30
	8 x 8	9.04		8 x 8	27.20
	10 x 10	14.20		10 x 10	42.50
	12 x 12	20.40		12 x 12	61.20
	14 x 14	27.77		14 x 14	83.30
	16 x 16	36.27		16 x 16	108.80
	20 x 20	56.67		20 x 20	170.00
	24 x 24	81.60		24 x 24	244.80
¾ x	6 x 6	7.68	2	6 x 6	20.40
	8 x 8	13.60		8 x 8	36.24
	10 x 10	21.30		10 x 10	56.70
	12 x 12	30.60		12 x 12	81.60
	14 x 14	41.65		14 x 14	111.07
	16 x 16	54.40		16 x 16	145.07
	20 x 20	85.00		20 x 20	226.67
	24 x 24	122.40		24 x 24	326.40

All Surfaces – Decarburization Free
Blanchard Ground – Thickness Dimension Plus or Minus .005”
Additional Sizes and Grades are Available – Refer to Office

TOOL STEEL COLOR CODES

AISI-W1
No. 11 Special – Avacado
Black Diamond – Black

AISI-O1
Saratoga – Black w/Yellow Stripe
Ketos – Green w/Yellow Stripe
Truform – Yellow w/Pink Stripe

AISI-O2
Stentor – Blue

AISI-O6
Cartech 06 – Gray
Oilgraph – Pink w/Gray Stripe
Halgraph – Green w/Gray Stripe

AISI-A2
No. 484 – Orange
Sagamore – Red w/White Stripe
Airkool – Brown w./Pink Stripe
Windsor – Red w/Gray Stripe
Select-B – Red w/Blue Stripe

AISI-A6
Vega – Brown
Apache – Purple w/Orange Stripe
Jessair – Purple w/White Stripe
Lesco A6 – Purple w/Tan Stripe

AISI-A8
MGR – Purple w/Green Stripe

AISI-D2
No. 610 – Yellow
Ontario– White w/Yellow Stripe
Airdi 150 – White w/Purple Stripe
CNS-1 – White w/Black Stripe
Olympic – White w/Brown Stripe

AISI-D3
Hampden – Light Blue
Huron – Black w/Light Blue Stripe
GSN – Light Blue w/Brown Stripe

AISI-D5
Cherokee – Black w/Red Stripe

AISI-S2
Solar – Dark Green

AISI-S5
Chickasau – Pink w/Green stripe
LaBelle Silicon #2 – Pink w/Yellow Stripe

AISI-S7
Cartech S7 – Gold
Arapaho – Gray w/Blue STripe
Crucible S7 – Gray w/Red STripe
Supershock 7 Red w/Green Stripe
Lesco S7 – Blue w/Yellow Stripe

AISI-L6
RDS – Purple
Champaoly – Purple w/Yellow Stripe

AISI-H13
No. 883 – Red
Potomac M – Yellow w/Red Stripe
Nu Die V – Yellow w/White Stripe
Thermold H13 – Yellow w/Purple Stripe
VDC – Yellow w/Brown Stripe
Viscount 44 PH – Orange w/Blue Stripe

AISI-420
Miami SS – Brown w/Orange Stripe
CSM 420 SS – Green w/Gold Stripe

AISI-P20
CSM 2 PH – Pink w/Black Stripe

AISI-P21
Cascade PH – Red w/Yellow Stripe

AISI-M2
Speed Star – Tan
Cheyenne – Tan w/Red Stripe
Rex M2 – Gold w/Red Stripe
Motung 652 – Gold w/Purple Stripe
Mustang – Gold w/Blue Stripe
Double-Six – Gold w/Black Stripe
Vasco M2 – Gold wGreen Stripe

AISI-M4
Four Star – Green w/Red Stripe
Rex M4 – Green w/White Stripe
Cyclops M4 – Blue w/Red Stripe
Stark – Green w/Purple Stripe
Neatro – Green w/Orange Stripe

AISI-M42
Super Star – Blue w/Orange Stripe
Rex M42 – Orange w/Brown Stripe
Dynamax – Light Blue w/Red Stripe
Hypercut – Blue w/Pink Stripe

AISI-T1
Red Cut Superior – Brown w/Red Stripe
Rex AA – Red w/Brown Stripe

MARAGING STEELS
Vasco Max 250 – Silver w/Red Stripe
Vaxco Max 300 – Silver w/Black Stripe
Vasco Max 350 – Silver w/Blue Stripe

SPECIAL PURPOSE
A-HT – White w/Blue Stripe
Abrasalloy – Silver
Atloy HT – Silver w/Green Stripe
Brake Die HT – Pink w/White Stripe
Maxel 3½ HT – White w/Pink Stripe
Marshalloy PH – Orange w/White Stripe
Non-Tempering – Copper
CPM-10V – Black w/Silver Stripe
Vasco Wear – Red & Blue w/White Stripe
Hyten B3X – Green

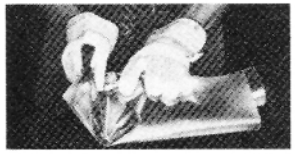
TICRONIC TOOL STEEL FOIL WRAP

STAINLESS STEEL TYPE 321
FOR
SCALE FREE HEAT TREATMENT

.002” x 24” x 50 Ft. and 100 Ft. Dispenser Packages

So Simple to use:

Place tool in TICRONIC Tool Steel Foil Wrap



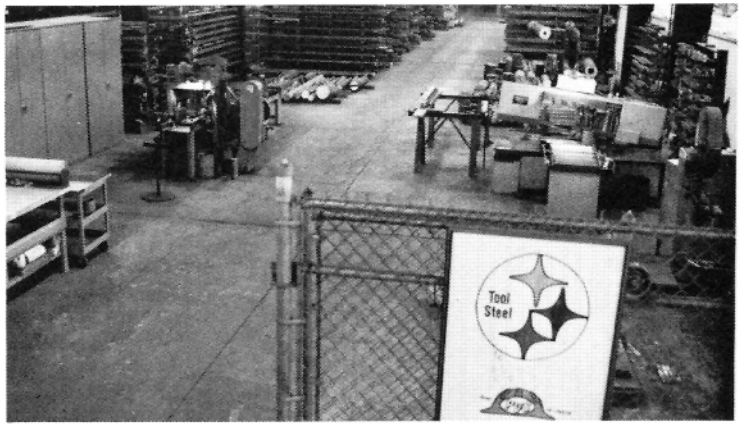
Fold over and crimp edges forming air tight package.

Place package in oven, Heat Treat in usual way. Air Harden.

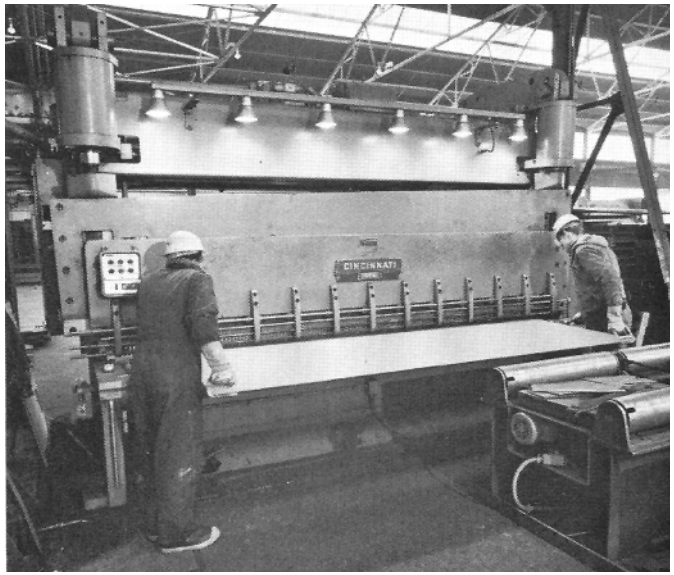
TICRONIC FOIL WRAP DECREASES AIR HARDENING COSTS:

- Eliminates Ni-chrome box packing with charcoal, sawdust or other carbonaceous materials.
- No special controls or atmosphere furnace required.
- Permits time saving “In-House” heat treating.
- Packaged in easy roll-out dispenser carton.

RESULT: SCALE FREE TOOLS



Tool Steel Stock for your tooling and production requirements.



STAINLESS STEELS

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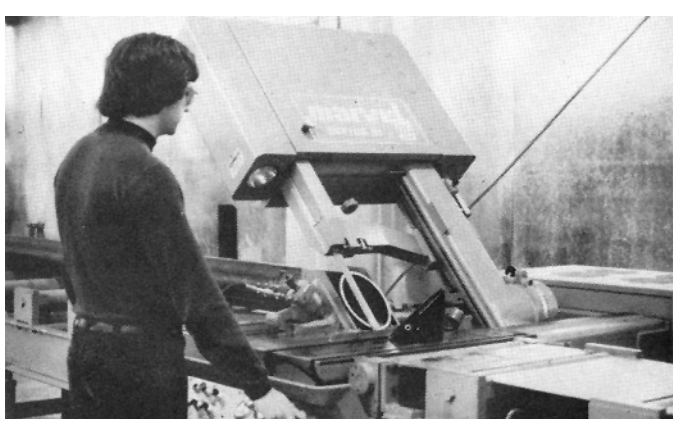
–your source of stainless steels with processing facilities available

CUTTING	PUNCHING
DRILLING	ROLLING
FORMING	SHEARING
MACHINING	THREADING
PLASMA ARC CUTTING	WELDING



Stainless pipe bevel sawcut for prercise fit-up.

STAINLESS STEEL GRADES

303 – Free machinging variation of 302/304 for automatic screw machines. Corrosion resistant to atmospheric conditions, sterilizing solutions and most organic and inorganic chemicals, dyes, nitric acid and foods. ASTM A-581, A-582.

304 – A low carbon variety of 302. Minimal carbide precipitation during welding while offering excellent resistance to corrosives and atmospheric conditions. ASTM A-167, A-240.

304L – Extra Low carbon variation of 302. Minimizes carbide precipitation during welding. Retains same corrosion resitance as 304 with slightly lower mechanical properties. ASTM A-167, A-240.

309 – The corrosion resistance of this grade is slightly better than 302. It is recommended for furnace, fire box and other high temperature applications.

310 – The corrosion resistance of this grade is slightly better than 302. However this grade has high elevated temperature strength and scale resistance than 309 It is recommended for Heat Exchangers, combustion chambers, gas turbines, etc.

316 – Higher corrosion and pitting resistance than 304 plus higher strength at elevated temperatures. Used for pumps, valves, marine, chemical and textile applications. ASTM A-167, A-240.

315L – Same properties as 316 but with extra low carbon for minimizing carbide precipitation during welding. ASTM A-167, A-240.

321 – Resistance to intergranular corrosion through the addition of titanium. No carbide precipitation. For weldments subject to severe corrosion. Resistance to most organic chemicals, dyes and many inorganic chemicals. AMS 5510, MIL-S-6721.

410 – This alloy is made especially to meet the rigorous requirements of highly stressed parts where corrosion resistance, good strength, and ductility are needed. It is used extensively for steam turbine buckets, blades, bucket covers, gas turbine compressor blades, nuclear reactor control rod mechanisms, valves, etc. ASTM A-276, A-555

416 – A free machining variation of 410 and is also heat treatable like 410. Corrosive resistance to food acids, basic salts, water and most atmospheres. ASTM A-484, A-555.

430 – Has greater corrosion resistance than 410. Typical applications include screws, bolts, rivets and other cold headed products, bicycle rims, automotive trim, camera parts, thermometers, radiator grills, etc. ASTM A-240.

STAINLESS STEEL SHEETS
TYPE 304

No. 2B Finish – Cold Rolled, Annealed, Pickled
Also available in No. 3 or No. 4 Finish – Polished One Side
ASTM A-240 ASME SA-240 QQ-S-766 MIL-S-5049

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
7 Ga. (.1875")		
48x 96	7.871	251.87
48x 120	7.871	314.84
48x 144	7.871	377.81
8 Ga. (.165")		
36x 120	6.930	207.90
48x 120	6.930	277.20
10 Ga. (.135")		
36x 120	5.670	170.10
48x 96	5.670	181.44
48x 120	5.670	226.80
60x 120	5.670	283.50
60x 144	5.670	340.20
72z 144	5.670	408.24
11 Ga. (.120")		
36x 96	5.040	120.96
36x 120	5.040	151.20
36x 144	5.040	181.44
48x 96	5.040	161.28
48x 120	5.040	201.60
48x 144	5.040	241.92
60x 120	5.040	252.00
60x 144	5.040	302.40
72x 120	5.040	302.40
72x 144	5.040	362.88
12 Ga. (.105")		
36x 96	4.410	105.84
36x 120	4.410	132.30
36x 144	4.410	158.76
42x 120	4.410	154.35
48x 96	4.410	141.12
48x 120	4.410	176.40
48x 144	4.410	211.68
60x 96	4.410	176.40
60x 120	4.410	220.50
60x 144	4.410	264.40
72x 120	4.410	264.60
72x 144	4.410	317.52
13 Ga. (.090")		
36x 96	3.780	90.72
36x 120	3.780	113.40
68x 120	3.780	151.20

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
14 Ga. (.075")		
30x 120	3.150	78.75
36x 96	3.150	75.60
36x 120	3.150	94.50
36x 144	3.150	113.40
42x 120	3.150	110.25
48x 96	3.150	100.80
48x 120	3.150	126.00
48x 144	3.180	151.20
60x 120	3.150	157.50
60x 144	3.150	189.00
72x 120	3.150	189.00
72x 144	3.150	226.80
16 Ga. (.060")		
30x 96	2.520	50.40
30x 120	2.520	63.00
36x 96	2.520	60.48
36x 120	2.520	75.60
36x 144	2.520	90.72
42x 120	2.520	88.20
48x 96	2.520	80.64
48x 120	2.520	100.80
48x 144	2.520	120.97
56x 120	2.520	117.60
60x 96	2.520	100.80
60x 120	2.520	126.00
60x 144	2.520	151.20
72x 120	2.520	151.20
70x 144	2.520	181.44
18 Ga. (.048")		
30x 96	2.016	40.32
30x 120	2.016	50.40
36x 96	2.016	48.38
36x 120	2.016	60.48
36x 144	2.016	72.58
42x 120	2.016	70.56
48x 96	2.016	64.51
48x 120	2.016	80.64
48x 144	2.016	96.77
56x 120	2.016	94.08
60x 96	2.016	100.80

(continued on following page)

STAINLESS STEEL SHEETS
TYPE 304

No. 2B Finish – Cold Rolled, Annealed, Pickled
Also available in No. 3 or No. 4 Finish – Polished One Side
ASTM A-240 ASME SA-240 QQ-S-766 MIL-S-5049

(Continued from preceding page)

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
19 Ga. (.042")		
36x 120	1.764	52.92
20 Ga. (.036")		
30x 96	1.512	30.24
30x 120	1.512	37.80
36x 96	1.512	36.29
36x 120	1.512	45.36
36x 144	1.512	54.43
42x 120	1.512	52.92
48x 96	1.512	48.38
48x 120	1.512	60.48
48x 144	1.512	72.58
22 Ga. (.030")		
30x 96	1.260	25.20
30x 120	1.260	31.50
36x 96	1.260	30.24
36x 120	1.260	37.80
36x 144	1.260	45.36

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
22 Ga. (.030")		
48x 96	1.260	40.32
48x 120	1.260	50.40
24 Ga. (.024")		
30x 96	1.008	20.16
30x 120	1.008	25.20
36x 96	1.008	24.19
36x 120	1.008	30.24
48x 96	1.008	32.26
48x 120	1.008	40.32
26 Ga. (.018")		
30x 96	.756	15.12
30x 120	.756	18.90
36x 96	.756	18.14
36x 120	.756	22.68
48x 96	.756	24.19
48x 120	.756	30.24
28 Ga. (.015")		
36x 96	.630	15.12
36x 120	.630	18.90

STAINLESS STEEL SHEETS
TYPE 304

EXTRA LOW CARBON
No. 2B Finish – Cold Rolled, Annealed, Pickled
Also available in No. 3 or No. 4 Finish – Polished One Side
ASTM A-240 QQ-S766 Cond. A ASME SA-240

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
8 Ga. (.165")		
48 x 120	6.930	277.20
10 Ga. (.135")		
48 x 120	5.670	226.80
11 Ga. (.120")		
48 x 120	5.040	201.60
12 Ga. (.105")		
48 x 120	4.410	176.40

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
14 Ga. (.075")		
36 x 120	3.150	94.50
48 x 120	3.150	126.00
16 Ga. (.060")		
36 x 120	2.520	75.60
48 x 120	2.520	100.80
18 Ga. (.048")		
36 x 120	2.016	60.48
48 x 120	2.016	80.64
20 Ga. (.036")		
48 x 120	1.512	60.48

STAINLESS STEEL SHEETS
TYPE 316

No. 2B Finish – Cold Rolled, Annealed, Pickled
Also available in No. 3 or No. 4 Finish – Polished One Side
ASTM A-240 QQ-S-766 Cond. A ASME SA-240

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
7 Ga. (.1875”)		
48 x 120	7.871	314.80
8 Ga. (.165”)		
48 x 120	6.930	277.20
10 Ga. (.135”)		
36 x 120	5.670	170.10
48 x 120	5.670	226.80
60 x 144	5.670	340.20
11 Ga. (.120”)		
36 x 96	5.040	120.96
36 x 120	5.040	151.20
48 x 120	5.040	201.60
60 x 144	5.040	302.40
12 Ga. (.105”)		
36 x 96	4.410	105.84
36 x 120	4.410	132.30
48 x 96	4.410	141.12
48 x 120	4.410	176.40
60 x 144	4.410	264.60
14 Ga. (.075”)		
36 x 96	3.150	75.60
36 x 120	3.150	94.50
48 x 96	3.150	100.80
48 x 120	3.150	126.00
60 x 144	3.150	189.00
16 Ga. (.060”)		
36 x 96	2.520	60.48
36 x 120	2.520	75.60
16 Ga. (.050”)		
48 x 96	2.520	80.64
48 x 120	2.520	100.80
60 x 144	2.520	151.20
18 Ga. (.048”)		
36 x 96	2.016	48.38
36 x 120	2.016	60.48
48 x 96	2.016	64.51
48 x 120	2.016	80.64
20 Ga. (.036”)		
36 x 96	1.512	36.29
36 x 120	1.512	45.36
48 x 96	1.512	48.38
48 x 120	1.512	60.48
22 Ga. (.030”)		
36 x 96	1.260	30.24
36 x 120	1.260	37.80
48 x 120	1.260	50.40
24 Ga. (.024”)		
36 x 96	1.008	24.19
36 x 120	1.008	30.24
48 x 96	1.008	32.26
48 x 120	1.008	40.32
26 Ga. (.018”)		
36 x 96	.756	18.14
36 x 120	.756	22.68

STAINLESS STEEL SHEETS
TYPE 316L

EXTRA LOW CARBON
No. 2B Finish – Cold Rolled, Annealed, Pickled
Also available in No. 3 or No. 4 Finish – Polished One Side
ASTM A-240 QQ-S766 Cond. A ASME SA-240

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
8 Ga. (.165”)		
48 x 120	6.930	277.20
10 Ga. (.135”)		
48 x 120	5.670	226.80
11 Ga. (.120”)		
36 x 120	5.040	151.20
48 x 120	5.040	201.60
12 Ga. (.105”)		
48 x 120	4.410	176.40
14 Ga. (.075”)		
48 x 120	3.150	126.00
16 Ga. (.060”)		
36 x 96	2.520	60.48
36 x 120	2.520	75.60
48 x 120	2.520	100.80
18 Ga. (.048”)		
48 x 120	2.016	80.64
20 Ga. (.036”)		
36 x 120	1.512	45.36
48 x 120	1.512	60.48

STAINLESS STEEL SHEETS
TYPE 309 and 310

No. 2D Finish – Cold Rolled, Annealed, Pickled
ASTM A-167
QQ-S-766

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
10 Ga. (.135”)		
48 x 120	5.670	226.80
11 Ga. (.120”)		
48 x 120	5.040	201.60
12 Ga. (.105”)		
48 x 120	4.410	176.40
14 Ga. (.075”)		
48 x 120	3.150	126.00
16 Ga. (.060”)		
48 x 120	2.520	100.80

STAINLESS STEEL SHEETS
TYPE 304

No. 2D Finish – Cold Rolled, Annealed, Pickled
AMS 5510 MIL-S-6721 ASTM A-240
QQ-S-766 ASTM A-157

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
10 Ga. (.141”)		
48 x 120	5.9062	236.2
11 Ga. (.120”)		
36 x 120	5.040	151.20
12 Ga. (.109”)		
48 x 120	4.5937	183.7
13 Ga. (.090”)		
36 x 120	3.780	113.40
14 Ga. (.078”)		
36 x 120	3.2812	98.4
48 x 120	3.2812	131.2
16 Ga. (.063”)		
36 x 120	2.625	78.8
48 x 120	2.625	105.0
18 Ga. (.050”)		
36 x 120	2.100	63.0
48 x 120	2.100	84.0
.040”		
36 x 120	1.6800	50.4
20 Ga. (.036”)		
36 x 120	1.5120	45.4
22 Ga. (.03125”)		
36 x 120	1.3125	39.4
24 Ga. (.025”)		
36 x 120	1.0500	31.5
.020”		
36 x 120	.8400	25.2
26 Ga. (.01875”)		
36 x 120	.7875	23.6
.016”		
36 x 120	.6720	20.2

STAINLESS STEEL SHEETS
TYPE 410

No. 2D Finish – Cold Rolled, Annealed, Pickled
ASTM A-240 QQ-S-766 AMS-5504

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
10 Ga. (.135")		
48 x120	5.562	222.5
11 Ga. (.120")		
48 x120	4.944	197.8
12 Ga. (.105")		
48 x120	4.342	173.7
14 Ga. (.075")		
36 x 120	3.094	92.82
48 x 120	3.094	123.8
16 Ga. (.060")		
36 x 120	2.451	73.53
48 x 120	2.451	98.04

STAINLESS STEEL SHEETS
TYPE 430

No. 2B Finish – Cold Rolled, Annealed, Pickled
ASTM A-240
Also available in No. 3 or No. 4 Finish – Polished One Side

Stainless Steel Gauge Width and Length	Weight Lbs. per Square Foot	Est. Wt. per Sheet
10 Ga. (.135")		
48 x 120	5.562	222.48
11 Ga. (.120")		
36 x 120	4.944	148.32
48 x 120	4.944	197.76
12 Ga. (.105")		
36 x 120	4.326	129.78
48 x 120	4.326	173.04
14 Ga. (.075")		
36 x 120	3.090	92.70
48 x 120	3.090	123.60
16 Ga. (.060")		
36 x 96	2.472	74.16
36 x 120	2.742	79.10
48 x 120	2.742	98.88
48 x 144	2.742	118.66
18 Ga. (.048")		
36 x 96	1.978	47.47
36 x 120	1.978	59.34
48 x 120	1.978	78.12
20 Ga. (.036")		
30 x 96	1.483	29.66
30 x 120	1.483	37.08
36 x 96	1.483	35.59
36 x 120	1.483	44.49
48 x 120	1.483	59.32
22 Ga. (.030")		
30 x 120	1.236	30.90
36 x 96	1.236	29.66
36 x 120	1.236	37.08
48 x 120	1.236	49.44
24 Ga. (.024")		
30 x 120	.989	24.73
36 x 96	.989	23.74
36 x 120	.989	29.67
48 x 120	.989	39.56
26 Ga. (.018")		
30 x 96	.742	18.55
36 x 96	.742	17.81
36 x 120	.742	22.26
28 Ga. (.015")		
36 x 120	.618	18.54

STAINLESS STEEL PLATES
TYPE 304 and 304L

No. 1 Finish – Hot Rolled, Annealed and Pickled
ASTM A-240 ASME SA-240
A-167

Thickness and Width			Wt. per Sq. Ft.	Weight per Ft.	Stock Lengths in Feet: Type 304	Stock Lengths in Feet: Type 304L
3/16	x	48	8.579	34.34	8, 10, 20, 30	20
		60		42.90	10, 12, 20, 30	20
		72		51.47	10, 12, 20, 30	20, 30
		84		60.05	20, 30	20
		96		68.63	20, 30	20, 30
1/4	x	48	11.162	44.65	8, 10, 20	10, 20
		60		55.81	10, 20	20
		72		66.97	10, 12, 20	20
		84		78.13	20	20
		96		89.30	20, 30	20, 30
5/16	x	48	13.746	55.00	20	
		60		68.75	20	. . .
		84		96.22	20	. . .
		96		109.97	20, 30	20, 30
3/8	x	48	16.496	65.98	20	. . .
		60		82.50	20	. . .
		72		98.98	20, 30	. . .
		84		115.47	20	20
		96		131.97	20, 30	20, 30
1/2	x	48	21.663	86.64	20	
		60		108.30	20	. . .
		72		129.98	20	20
		84		151.64	20	. . .
		96		173.30	20, 30	20, 30
5/8	x	72	26.831	160.99	10	. . .
		96		214.65	20, 30	30
3/4	x	48	32.123	128.50	12	. . .
		96		256.98	20 ,30	20, 30
7/8	x	96	37.291	298.33	20	. . .
1	x	60	42.665	213.33	10	. . .
		96		341.32	20, 30	20, 30
1⅛	x	96	47.831	382.70	20	
1¼	x	84	53.006	371.04	20	. . .
	x	96		424.05	20 ,30	10, 20
1½	x	84	63.331	443.32	20	
	x	96		506.65	20, 30	20, 30
1¾	x	84	73.67	515.69	20	. . .
	x	96		589.36	20, 30	20
2	x	96	84.009	672.07	20	20
2¼	x	96	94.781	758.25	. . .	20
2½	x	84	105.1	735.7	20	. . .
	x	96		840.8	20	. . .
3	x	84	126.302	884.11		20
	x	96		1010.42	. .	20
3¼	x	96	136.6	1092.8	20	. . .
3½	x	96	147.0	1176.0	20	. . .
3¾	x	96	157.3	1258.4	20	. . .
4	x	96	167.3	1340.8	20	. . .

STAINLESS STEEL PLATES
TYPES 316, 316L

ASTM A-167 ASTM A-240 ASME SA-240
Hot Rolled, Annealed and Pickled

Thickness and Width			Wt. per Sq. Ft.	Weight per Ft.	Stock Lengths in Feet: Type 316	Stock Lengths in Feet: Type 316L
3/16	x	48	8.579	34.32	10, 20	20
		60		42.90	10, 20	20
		72		51.47	20	20, 30
		84		60.05	20, 30	20
		96		68.63	20, 30	20, 30
1/4	x	48	11.162	44.65	10, 20, 30	20
		60		55.81	20	20
		72		66.97	20, 30	20
		84		78.13	20	20
		96		89.30	20	20
5/16	x	48	13.746	55.00	20	. . .
		96		109.97	20, 30	30
3/8	x	48	16.496	66.00	20	30
		60		82.50	20	. . .
		72		98.98	20	20
		84		115.47	20	20
		96		131.97	20, 30	20, 30
1/2	x	48	21.663	86.64	20	. . .
		60		108.30	20	. . .
		72		129.98	20	20
		84		151.64	20	20
		96		173.30	20, 30	20, 30
9/16	x	84	24.247	160.99	20	. . .
5/8	x	96	26.831	214.65	20, 30	. . .
3/4	x	96	32.123	256.98	20, 30	. . .
7/8	x	96	37.291	298.33	20	. . .
1	x	96	42.665	341.32	20	20, 30
1¼	x	84	53.006	371.04	20, 30	. . .
	x	96		424.05	. . .	. . .
1½	x	84	63.331	443.32	20	20, 30
	x	96		506.65	20, 30	. . .
1¾	x	84	73.67	515.69	20	20
2	x	84	84.01	588.1	20	20
2½	x	84	105.1	735.7	20	20
3	x	84	126.3	884.1	20	20

STAINLESS STEEL PLATE

DIAMOND FLOOR PLATE
Type 304 Spec: MIL-F-20138 – Pattern B

Size	Wt. per Sq. Ft.	Weight per Piece
1/8 x 36 x 120	6.15	184.50
3/16 x 48 x 144	8.70	417.60
1/4 x 48 x 144	11.25	540.00

STAINLESS ROUNDS
TYPE 303

Annealed – Free Machining
AMS 5640 QQ-S-764 CLASS 303 COND. A
1/16" TO ½" dia. ASTM A581 Cond. A (Wire Sizes)
33/64" dia. and over ASTM A583 Cond. A (Bar Sizes)

Size in Inches	Est. Wt. Per Ft. Pounds	Random Lengths in Feet: Cold Drawn	Centerless Ground	Ground & Polished Std. Tol.	Grd. & Pol. Accuracy Tolerance**
1/8	.042	12	12	12	12
3/16	.094	12	12	12	12
1/4	.167	12	12	12	12
5/16	.261	12	12	12	12
3/8	.376	12	12	12	12
7/16	.511	12	12	12	12
1/2	.668	12	12	12	12
9/16	.845	. . .	12	. . .	. . .
5/8	1.04	. . .	12	12	12
11/16	1.26	. . .	12	. . .	. . .
3/4	1.50	. . .	12	12	12
13/16	1.76	. . .	12	. . .	. . .
7/8	2.04	. . .	12	12	12
15/16	2.35	. . .	12	. . .	. . .
1	2.67	. . .	12	12	12
1 1/16	3.01	. . .	12	. . .	. . .
1 1/8	3.38	. . .	12	12	12
1 3/16	3.77	. . .	12	. . .	. . .
1 1/4	4.17	. . .	12	12	12
1 5/16	4.60	. . .	12	. . .	. . .
1 3/8	5.05	. . .	12	. . .	. . .
1 7/16	5.52	. . .	12	. . .	. . .
1 1/2	6.01	. . .	12	12	12
1 9/16	3.52	. . .	12	12	12
1 5/8	7.05	. . .	12	. . .	. . .
1 11/16	7.60	. . .	12	. . .	. . .
1 3/4	8.18	. . .	12	12	12
1 13/16	8.77	. . .	12	. . .	. . .
1 7/8	9.39	. . .	12	. . .	. . .

**Half Standard Tolerance

(Continued on following page)

STAINLESS ROUNDS
TYPE 303

Annealed – Free Machining
AMS 5640 QQ-S-764 Class 303 Cond. A
ASTM A581 Cond. A (Wire Sizes) ASTM A582 Cond. A (Bar Sizes)

Size in Inches	Est. Wt. Per Ft. Pounds	Random Lengths in Feet			
		Cold Drawn	Centerless Ground	Ground & Polished Std. Tol.	Grd. & Pol. Accuracy Tolerance**
(Continued from preceding page)					
1 15/16	10.02	. . .	12	. . .	. . .
2	10.68	. . .	12	. . .	. . .
2 1/16	11.36	. . .	12	. . .	. . .
2 1/8	12.06	. . .	12	. . .	. . .
2 3/16	12.78	. . .	12	. . .	. . .
2 1/4	13.52	. . .	12	. . .	. . .
2 5/16	14.28	. . .	12	. . .	. . .
2 3/8	15.06	. . .	12	. . .	. . .
2 7/16	15.87	. . .	12	. . .	. . .
2 1/2	16.69	. . .	12	. . .	. . .
2 9/16	17.53	. . .	12	. . .	. . .
2 5/8	15.40	. . .	12	. . .	. . .
2 11/16	19.29	. . .	12	. . .	. . .
2 3/4	20.20	. . .	12	. . .	. . .
2 7/8	22.07	. . .	12	. . .	. . .
2 15/16	23.04	. . .	12	. . .	. . .
3	24.03	. . .	12	. . .	. . .
3 1/8	26.08	. . .	12	. . .	. . .
3 1/4	28.21	. . .	12	. . .	. . .
3 3/8	30.42	. . .	12	. . .	. . .
3 1/2	32.71	. . .	12	. . .	. . .
3 5/8	35.09	. . .	12	. . .	. . .
3 3/4	37.55	. . .	12	. . .	. . .
4	42.73	. . .	12	. . .	. . .
4 1/4	48.23	. . .	12	. . .	. . .
4 1/2	54.08	. . .	12	. . .	. . .
4 3/4	60.25	. . .	12	. . .	. . .
5	66.76	. . .	12	. . .	. . .
5 1/2	80.78	. . .	12	. . .	. . .
6	96.13	. . .	12	. . .	. . .

STAINLESS ROUNDS

TYPES 304, 316, 17-4 PH Cond A

304 – ASTM A-726 ASME SA 479 QQ-S-763 Cond. A
316 – ASTM A-276 ASME SA 479 QQ-S-763 Cond. A
17-4 PH Cond. A – AMS 5643

Size in Inches	Weight per Ft. Lbs.	Random Lengths in Feet		
		304 Annealed & Ground	316 Annealed & Ground	17-4 PH Centerless Ground
1/8	.042	12*	12*	. . .
3/16	.094	12*	12*	12
1/4	.167	12*	12*	12
5/16	.261	12*	12*	12
3/8	.376	12*	12*	12
7/16	.511	12*	12*	12
1/2	.668	12*	12*	12
9/16	.845	12	12	12
5/8	1.04	12	12	12
11/16	1.26	12	12	12
3/4	1.50	12	12	12
13/16	1.76	12	. . .	12
7/8	2.04	12	12	12
15/16	2.35	12	12	. . .
1	2.67	12	12	12
1 1/16	3.01	. . .	12	12
1 1/8	3.38	12	12	12
1 3/16	3.77	. . .	12	12
1 1/4	4.17	12	12	12
1 5/16	4.60	12	12	12
1 3/8	5.05	12	12	12
1 7/16	5.52	12	12	12
1 1/2	6.01	12	12	12
1 5/8	7.05	12	12	12
1 11/16	7.60	. . .	12	. . .
1 3/4	8.18	12	12	12

*Cold Drawn Finish ASTM A-580 Cond. A

(Continued on following page)

STAINLESS ROUNDS
TYPE 304, 316, 17-4 PH Cond A

304 – ASTM A-276 ASME SA 479 QQ-S-763 Cond. A
316 – ASTM A-276 ASME SA 479 QQ-S-763 Cond. A
17-4 PH Cond. A – AMS 5643

Size in Inches	Weight per Ft. Lbs.	Random Lengths in Feet		
		304 Annealed & Ground	316 Annealed & Ground	17-4 PH Centerless Ground
(Continued from preceding page)				
1 7/8	9.39	12	12	12
1 15/16	10.02	. . .	12	12
2	10.68	12	12	12
2 1/8	12.06	12	12	12
2 1/4	13.52	12	12	12
2 3/8	15.06	12	12	. . .
2 7/16	15.87	. . .	12	12
2 1/2	16.69	12	12	12
2 5/8	18.40	12	12	12
2 3/4	20.20	12	12	12
2 7/8	22.07	12	12	. . .
2 15/16	23.04	. . .	12	. . .
3	24.03	12	12	12
3 1/8	26.08	12	12	12
3 1/4	28.21	12	12	12
3 3/8	30.42	12	12	. . .
3 1/2	32.71	12	12	12
3 3/4	37.55	12	12	12
4	42.72	12	12	12
4 1/4	48.23	12	12	12
4 1/2	54.08	12	12	12
4 3/4	60.25	12	. . .	12
5	66.76	12	12	12
5 1/2	80.78	12	12	12
6	96.13	12	12	12
6 1/2	112.80	12	. . .	. . .

Available up to 12” diameter as Hot Rolled, Annealed, and Rough Turned.

STAINLESS ROUNDS
TYPE 416

Annealed – Free Machining
AMS 5610 QQ-S-764 Class 416, Cond. A
3/32 to 1/2” dia. ASTM A581 Cond. A (Wire Sizes)
33/64 dia. and over ASTM A582 Cond. A (Bar Sizes)

Size in Inches	Est. Wt. Per Ft. Pounds	Random Lengths in Feet			
		Cold Drawn	Centerless Ground	Ground & Polished Std. Tol.	Grd. & Pol. Accuracy Tolerance**
1/8	.042	12	12	. . .	12
5/32	.065	12	12	. . .	. . .
3/16	.094	12	12	. . .	12
7/16	.128	12	12	. . .	. . .
1/4	.167	12	12	12	12
9/32	.211	12	12	. . .	. . .
5/16	.261	12	12	12	12
3/8	.376	12	12	12	12
7/16	.511	12	12	. . .	. . .
15/32	.587	12	12	12	. . .
1/2	.668	12	12	. . .	12
9/16	.845	. . .	12	12	. . .
5/8	1.04	. . .	12	12	12
11/16	1.26	. . .	12	. . .	. . .
3/4	1.50	. . .	12	12	12
13/16	1.76	. . .	12	. . .	. . .
7/8	2.04	. . .	12	. . .	. . .
15/16	2.35	. . .	12	. . .	. . .
1	2.67	. . .	12	12	12
1 1/16	3.01	. . .	12	. . .	. . .
1 1/8	3.38	. . .	12	. . .	. . .
1 3/16	3.77	. . .	12	. . .	. . .
1 1/4	4.17	. . .	12	. . .	. . .
1 5/16	4.60	. . .	12	. . .	. . .
1 3/8	5.05	. . .	12	. . .	. . .
1 7/16	5.52	. . .	12	. . .	. . .
1 1/2	6.01	. . .	12	. . .	. . .
1 9/16	6.52	. . .	12	. . .	. . .
1 5/8	7.05	. . .	12	. . .	. . .
1 11/16	7.60	. . .	12	. . .	. . .
1 3/4	8.18	. . .	12	. . .	. . .
1 13/16	8.77	. . .	12	. . .	. . .
1 7/8	9.36	. . .	12	. . .	. . .
1 15/16	10.02	. . .	12	. . .	. . .
2	10.68	. . .	12	. . .	. . .
2 1/16	11.36	. . .	12	. . .	. . .
2 1/8	12.06	. . .	12	. . .	. . .
2 3/16	12.78	. . .	12	. . .	. . .
2 1/4	13.52	. . .	12	. . .	. . .
2 3/8	15.06	. . .	12	. . .	. . .
2 1/2	16.69	. . .	12	. . .	. . .
2 5/8	18.40	. . .	12	. . .	. . .
2 3/4	20.20	. . .	12	. . .	. . .
2 7/8	22.07	. . .	12	. . .	. . .
3	24.03	. . .	12	. . .	. . .
3 1/8	26.08	. . .	12	. . .	. . .
3 1/4	28.21	. . .	12	. . .	. . .
3 1/2	32.71	. . .	12	. . .	. . .
3 3/4	37.55	. . .	12	. . .	. . .
4	42.73	. . .	12	. . .	. . .
4 1/4	48.23	. . .	12	. . .	. . .
4 1/2	54.08	. . .	12	. . .	. . .
4 3/4	60.20	. . .	12	. . .	. . .
5	66.76	. . .	12	. . .	

STAINLESS SQUARES
TYPES 303, 304, 416

303 – ASTM-A-582 Cond. A – AMS 5640 – QQS-764 Cond. A
304 – ASTM-A-276 – ASME-SA-479 – QQS-763 Cond. A
416 – ASTM-A-582 Cond. A – QQS-764 Cond. A

Size in Inches	Weight per Ft. Lbs.	Random Lengths in Feet		
		303	304	416
1/8	.053	12	. .	. .
3/16	.120	12	. .	12
1/4	.213	12	. .	12
5/16	.332	12	. .	12
3/8	.478	12	. .	. .
7/16	.651	12	. .	12
1/2	.850	12	12	12
9/16	1.08	12	. .	. .
5/8	1.33	12	. .	12
3/4	1.91	12	12	12
7/8	2.60	12	. .	12
1	3.40	12	12	12
1 1/8	4.30	12	. .	. .
1 1/4	5.31	12	12	12
1 1/2	7.65	12	12	12
1 3/4	10.41	12	. .	. .
2	13.60	12	. .	12

STAINLESS HEXAGONS
TYPES 303, 304, 416

Annealed Cold Drawn

303 – ASTM-A-582 Cond. A – AMS 5640 – QQS-764 Cond. A
304 – ASTM-A-276 – ASME-SA-479 – QQS-763 Cond. A
416 – ASTM-A-582 Cond. A – QQS-764 Cond. A

Size in Inches	Weight per Ft. Lbs.	Random Lengths in Feet		
		303	304	416
1/8	.046	12	. .	12
3/16	.104	12	. .	12
1/4	.184	12	. .	12
5/16	.288	12	. .	12
3/8	.414	12	. .	12
7/16	.564	12	12	12
1/2	.737	12	12	12
9/16	.932	12	12	12
5/8	1.150	12	12	12
11/16	1.393	12	12	12
3/4	1.658	12	12	12
13/16	1.955	12	12	12
7/8	2.256	12	12	12
15/16	2.588	12	12	. .
1	2.944	12	12	12
1 1/16	3.324	12	. .	. .
1 1/8	3.727	12	12	12
1 1/4	4.601	12	12	12
1 5/16	5.072	12	. .	. .
1 3/8	5.567	12	12	12
1 1/2	6.625	12	12	12
1 5/8	7.775	12	12	12
1 3/4	9.018	12	12	. .
1 7/8	10.355	12	. .	. .
2	11.780	12	12	. .
2 1/4	14.907	12	. .	. .
2 1/2	18.403	12	. .	. .
3	26.520	12	. .	. .

STAINLESS ANGLES
TYPES 304, 316

Hot Rolled, Annealed and Pickled

ASTM-A-276 ASME-SA-479 QQ-S-763

20 FOOT RANDOM LENGTHS

Size in Inches	Est. Wt. Per Ft. Pounds	Est. Wt. 20' Bar	
		T304	T316
3/4 x 3/4 x 1/8	0.59	11.80	. . . . .
1 x 1 x 1/8	0.80	16.00	16.00
3/16	1.16	23.20	23.20
1/4	1.49	29.80	. . . . .
1 1/4 x 1 1/4 x 1/8	1.01	20.20	20.20
3/16	1.48	29.60	29.60
1/4	1.92	38.40	. . . . .
1 1/2 x 1 1/2 x 1/8	1.23	24.60	24.60
3/16	1.80	36.00	36.00
1/4	2.34	46.80	46.80
2 x 2 x 1/8	1.65	33.00	. . . . .
3/16	2.44	48.80	48.80
1/4	3.19	63.80	62.80
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	82.00
3/8	5.90	118.00	. . . . .
3 x 2 x 3/16	3.07	61.4	. . . . .
1/4	4.10	82.0	. . . . .
3 x 3 x 3/16	3.71	74.20	. . . . .
1/4	4.90	98.00	98.00
5/16	6.10	122.00	. . . . .
3/8	7.20	144.00	144.00
3 1/2 x 3 1/2 x 1/4	5.80	116.00	. . . . .
4 x 4 x 1/4	6.60	132.00	132.00
3/8	9.80	196.00	196.00

STAINLESS FLATS
TYPES 304, 316

Hot Rolled, Annealed and Pickled
ASTM A-276 QQ-W-763 ASME SA-479
12 FOOT RANDOM LENGTHS

Size in Inches	Weight per Ft. Lbs.	Est. Wt 12' Bar	302 304	316
⅛ x ½	.213	2.50	x	...
⅝	.266	3.19	x	...
¾	.319	3.83	x	...
1	.425	5.10	x	x
1¼	.531	6.37	x	...
1½	.638	7.66	x	...
2	.850	10.20	x	...
2½	1.06	12.72	x	...
3	1.28	15.36	x	...
3/16 x ½	.319	3.83	x	...
⅝	.398	4.78	x	...
¾	.478	5.74	x	...
1	.638	7.66	x	x
1¼	.797	9.56	x	...
1½	.956	11.47	x	x
1¾	1.12	13.39	x	...
2	1.28	15.36	x	x
2½	1.59	19.08	x	...
3	1.91	22.92	x	...
¼ x ½	.425	5.10	x	x
⅝	.531	6.37	x	...
¾	.638	7.66	x	x
1	.850	10.20	x	x
1¼	1.06	12.72	x	x
1½	1.28	15.36	x	x
1¾	1.49	17.88	x	...
2	1.70	20.40	x	x
2½	2.13	25.56	x	x
3	2.55	30.60	x	x
4	3.40	40.80	x	...
6	5.10	61.20	x	...
⅜ x ½	.638	7.66	x	...
¾	.956	11.47	x	...
1	1.28	15.36	x	x
1¼	1.59	19.08	x	...
1½	1.91	22.92	x	x
1¾	2.23	26.77	x	...
2	2.55	30.60	x	x
2½	3.19	38.28	x	x
3	3.83	45.96	x	x
4	5.10	61.20	x	...

Size in Inches	Weight per Ft. Lbs.	Est. Wt 12' Bar	302 304	316
¾ x 5	6.38	76.56	x	...
6	7.65	91.80	x	...
½ x ¾	1.28	15.36	x	...
1	1.70	20.40	x	x
1¼	2.13	25.56	x	...
1½	2.55	30.60	x	x
1¾	2.98	35.76	x	...
2	3.40	40.80	x	x
2½	1.25	51.00	x	x
3	4.10	61.20		x
3½	5.95	71.40	x	...
4	6.80	81.60	x	x
4½	7.65	91.80	x	...
5	8.50	102.00	x	...
6	10.20	122.40	x	...
			x	
⅝ x ¾	1.59	19.13	x	...
1	2.13	25.56	x	...
1½	3.19	38.28	x	...
2	4.25	51.00	x	...
2½	5.31	63.72		...
3	6.38	76.56	x	...
3	7.44	89.26	x	...
4	8.50	102.00	x	...
6	12.75	154.00	x	...
8	17.00	204.00	x	...
¾ x 1	2.55	30.60	x	...
1¼	3.19	38.26	x	...
1½	3.83	45.96	x	...
1¾	5.10	61.20	x	x
2	6.38	76.56	x	...
2½	7.65	91.80	x	x
3	10.20	122.40	x	
4	12.75	153.00	x	...
6	15.30	183.60	x	...
1 x 1½	5.10	61.20	x	...
1¾	5.95	71.40	x	...
2	6.80	81.60	x	x
2½	8.50	102.00	x	...
3	10.20	122.40	x	...
4	13.60	163.20	x	...
6	20.40	244.80	x	...

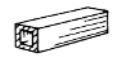
STAINLESS STEEL TUBING
SEAMLESS AND WELDED
TYPES 304

Cold Draawn, Annealed and Pickled
17 to 24 FT. RANDOM LENGTHS
SAE 30304 ASTM A269

Size O.D.	B.W. Ga.	Wall Dec. In.	Size I.D.	Wt. per Ft. Lbs.
3/16"	22	.028	.131	.0478
	20	.035	.117	.0572
¼"	20	.035	.180	.0804
	18	.049	.152	.1052
	16	.065	.120	.1284
5/16"	22	.028	.256	.0852
	20	.035	.242	.1039
	18	.049	.214	.1382
	16	.065	.182	.1722
⅜"	20	.035	.305	.1271
	18	.049	.277	.1706
	16	.065	.245	.2152
½"	20	.035	.430	.1738
	18	..049	.402	.2360
	16	.065	.370	.3020
	13	.095	.310	.4109
	11	.120	.260	.4870
⅝"	22	.028	.569	.1785
	20	.035	.555	.2205
	18	.049	.527	.3014
	16	.065	.495	.3888
	11	.120	.385	.6472
¾"	20	.035	.680	.2673
	18	.049	.652	.3668
	16	.065	.620	.4755
	13	.095	.560	.6646
⅞"	18	.049	.777	.4323
	16	.065	.745	.5623
	11	.120	.635	.9676
1"	20	.035	.930	.3607
	18	.049	.902	.4977
	16	.065	8?0	.6491
	14	.083	.834	.8129
	13	.095	.810	.9182
	11	.120	.760	1.128
	¼	.250	.500	2.003
1¼"	18	.049	1.152	.6285
	16	.065	1.120	.8226
	14	.083	1.084	1.034

Size O.D.	B.W. Ga.	Wall Dec. In.	Size I.D.	Wt. per Ft. Lbs.
1¼"	11	.120	1.010	1.448
	3/16	.188	.875	2.132
	¼	.250	.750	2.670
1½"	18	.049	1.402	.7593
	16	.065	1.370	.9962
	14	.083	1.334	1.256
	11	.120	1.260	1.769
	3/16	.187	1.125	2.634
	¼	.250	1.000	3.338
1¾"	16	.065	1.620	1.170
	11	.120	1.510	2.089
	3/16	.187	1.375	3.136
2"	18	.049	1.902	1.021
	16	.065	1.870	1.343
	14	.083	1.834	1.699
	11	.120	1.760	2.409
	3/16	.188	1.625	3.638
	¼	.250	1.500	4.673
2¼"	16	.065	2.120	1.517
	11	.120	2.010	2.730
	3/16	.188	1.875	4.140
	¼	.250	1.750	5.340
2½"	16	.065	2.370	1.690
	11	.120	2.260	3.050
	3/16	.188	2.125	4.642
	¼	.250	2.000	6.008
2¾"	16	.065	2.620	1.864
	11	.120	2.510	3.371
3"	16	.065	2.870	2.037
	11	.120	2.760	3.691
	3/16	.187	2.625	5.646
	¼	.250	2.500	7.343
3¼"	11	.120	3.010	4.011
3½"	16	.065	3.700	2.385
	11	.120	3.260	4.332
3¾"	11	.120	3.510	4.656
4"	11	.120	3.760	4.973
	¼	.250	3.500	10.010

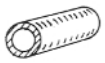
STAINLESS STEEL TUBE
TYPES 304 WELDED



Onamental Grade – Mill Finish
17 - 24 RANDOM LENGTHS

Square O.D.	Wall Thickness	Weight Per Ft. in Lbs.
1	11 Ga.-.120	1.44
1½	11 Ga.-.120	2.25
2	11 Ga.-.120	3.07

Rectangular O.D.	Wall Thickness	Weight Per Ft. in Lbs.
2 x 1	11 Ga.-.120	2.25
3 x 2	11 Ga.-.120	3.76



STAINLESS STEEL PIPE
TYPES 304 TYPE 316

Seamless and Welded
Schedule 40 – Standard IPS
Schedule 5 and 10 – Available through 4”
Cold Finished, Annealed and Pickled
17 - 24 FOOT RANDOM LENGTHS
ASTM A312 ASTM A-376 MIL P-1144

Pipe Size Inches	O.D.	I.D.	Wall Thickness Inches	Wt. Per Ft. Lbs.	Type 304	Type 316
⅛	.405	.269	.068	.245	x	...
¼	.540	.364	.088	.424	x	x
⅜	.675	.493	.091	.567	x	x
½	.840	.622	.109	.850	x	x
¾	1.050	.824	.113	1.130	x	x
1	1.315	1.049	.133	1.680	x	x
1¼	1.660	1.380	.140	2.270	x	x
1½	1.900	1.610	.145	2.720	x	x
2	2.375	2.067	.454	3.653	x	x
2½	2.842	2.469	.203	5.790	x	...
3	3.500	3.068	.216	7.580	x	...
3½	4.000	3.548	.226	9.109	x	...
4	4.500	4.026	.237	10.790	x	...
5	5.563	5.047	.258	14.620	x	...
6	6.625	6.065	.280	18.970	x	...

STAINLESS STEEL PIPE
TYPES 304 TYPE 316

Seamless and Welded
Schedule 80 – Extra Heavy IPS
Cold Finished, Annealed and Pickled
17 - 24 FOOT RANDOM LENGTHS
ASTM A-312

Ex. Hv. Pipe Size Inches	O.D.	I.D.	Wall Thickness Inches	Wt. Per Ft. Lbs.
⅛	.405	.215	.095	.315
¼	.540	.302	.119	.535
⅜	.675	.423	.126	.738
½	.840	.546	.147	1.088
¾	1.050	.742	.154	1.474
1	1.315	.957	.179	2.172
1¼	1.660	1.278	.191	2.997
1½	1.900	1.500	.200	3.631
2	2.375	1.939	.218	5.022
*3	3.500	2.900	.300	10.250
*3½	4.000	3.364	.318	12.510
*4	4.500	3.826	.337	14.980
*5	5.563	4.813	.375	20.780
*6	6.625	5.761	.432	28.57

*These sizes are Seamless.

ALUMINUM

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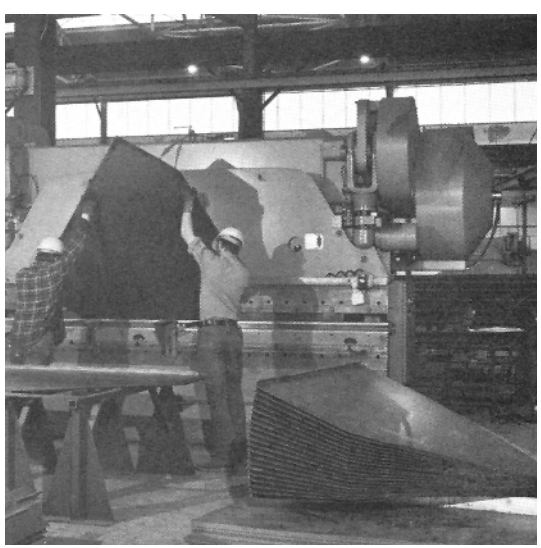
–your “metals center” offering a complete fabrication service

FORMING	ROLLING
MACHINING	SAW CUTTING
PLASMA ARC CUTTING	SHEARING
PUNCHING	WELDING



Forming sheets – a “first step” in processing

ALUMINUM SHEET, PLATE AND COIL

NON-HEAT TREATABLE ALLOYS:
1100 – is commercially pure aluminum (99.00% minimum). Excellent corrosion resistance workability and weldability; high thermal conductivity. Tensile strength range 14,000 to 24,000 Psi. Uses include deep drawing and spinning requirements sheets metal work, decorative and architectural applications, air ducts, name plates, fan blades, etc. Conforms to Federal specification QQ-A-250/1E, ASTM B-209.

3003 – is alloyed with 1.2% manganese to provide a tensile strength range of 17,000 to 30,000 Psi. Excellent workability, weldability and corrosion resistance. Used for drawing, spinning, fuel tanks, sheet metal work and other applications where slightly higher strength than 1100 is required. Conforms to Federal specification QQ-A-250/2D, ASTM B-209.

5005 – is alloyed with 8% magnesium. Tensile strength range 18,000 to 30,000 Psi. Excellent workability, weldability and corrosion resistance. Specified for applications comparable to 1100 and 3003 – where anodizing is required. Anodized finish matches that of architectural alloy 6063. Conforms to ASTM B-209.

5052 – is alloyed with 2.5% magnesium. Tensile strength ranges 31,000 to 44,000 Psi. Very good corrosion resistance, good workability, weldability and strength. Used for aircraft fuel tanks, storm shutters, refrigerator liners, utensils, electronic mounting plates and panels, fan blades, etc. Conforms to Federal specification QQ-A-250/8E, ASTM B-209.

5083 – is alloyed with 4.45% magnesium 0.65% manganese and 0.15% chromium. Tensile strength range 40,000 to 59,000 Psi. For use in structures requiring high weld efficiency for maximum joint strength – plus light weight and corrosion resistance. Applications: marine components, truck bodies, construction equipment tanks, structural towers, drilling rigs, cryogenic applications, etc. Conforms to Federal specification QQ-A-250/6F, ASTM B-209.

HEAT TREATABLE ALLOYS:
2024, Alclad 2024 – are alloyed with 4.5% copper. Tensile strength range 30,000 to 63,000 Psi. Fair workability and corrosion resistance. Forming operations are limited. Used for high strength structural and aircraft applications. The clad form offers improved corrosion resistance. **2024** conforms to Federal specifiation QQ-A-250/Ae **Alclad 2024** to QQ-A-250/5F, ASTM B-209.

6061 – is alloyed with 1.0% magnesium and .6% silicon. Tensile strength range 20,000 to 42,000 Psi. Good formability, weldability and corrosion resistance. Used for engineering and structural applications, boats, furniture, transportation equipment, etc. Conforms to Federal specification QQ-A-250/11E, ASTM B-209.

7075, Alclad 7075 – are heavily alloyed with zinc together with lesser amounts of magnesium, copper and chromium. One of the strongest of the aluminum alloys, its use parallels that of 2024 with 7075 reflected when higher mechanical properties are desired. Forming operations are limited. The clad form offers improved corrosion resitance. **7075** conforms to Federal specification QQ-A-250/12E. **Alclad 7075** to QQ-A-250/13E, ASTM B-209.

ALUMINUM BAR

1100 – is commercially pure aluminum (99.00% minimum). It offers excellent corrosion resistance, workability and weldability. Thermal conductivity is high, strength is lower than other bar alloys. Conforms to Federal specificatons WW-T-700/1D, ASTM B-211.

2011 – screw machine stock is the best machining aluminum bar stock. Fine chips mean faster feeds and longer tool life. Machines to an excellent finish, has good strength, average formability. Conforms to Federal specification QQ-A-225/3D, ASTM B-211.

2017 – screw machine stock has machinability approaching **2011**. Particularly suited for deep drilling operations. Formability and corrosion resistance are good. Strength is approximately the same as **2011**. Conforms to Fed. Spec. QQ-A0225/5D, ASTM B-211.

2024 – is stonger than either **2011** or **2017**. Machines at speeds that approximate **2011** and **2017** when special care and methods are used. **2024** conforms to Federal specification QQ-A-225/6D, extruded to QQ-A-200/3D, ASTM B-211.

6061 – has excellent corrosion resistance and good formability with strength and machinability. Rounds and hexagons are screw machine stock. **6061** conforms to Federal spec. QQ-A-225/8D extruded to QQ-A-200/8D, ASTM B-221.

6063 (extruded) – is generally used for architectural and ornamental applications. It is highly corrosion resistant, can be formed with ease and is one of the most readily weldable alloys. The finish is pleasing and is suitable for anodizing. Conforms to Federal specification QQ-A0200/9C, ASTM B-211

7075 – is one of the strongest aluminum bars available. It is widely used in aircraft where light weight plus maximum strength is required. **7075** conforms to Federal specification QQ-A225/9D, extruded to QQ-A-200/11D, ASTM B-211.

CONVERSION TABLE

The alloys used for determining theoretical weights have been noted. For weights of other aluminum alloys, use the conversion factors below.

1100 5005 6061	3303 6262	5052 5454	5083 5086 5456	2011	2014 2017 7075	2024
1.00	1.01	0.98	0.979	1.04	1.03	1.02

ALUMINUM TUBING and PIPE

NON-HEAT TREATABLE ALLOYS:
3003 Tubing and Pipe – with its greater resistance to chemical attack, is a frequent choice in the manufacture and design of chemical equipment. Workability and weldability are excellent. Strength is slightly higher than 1100. Tubing meets Federal specification WW-T-700/2D and seamless pipe. Military specification MIL-P-25995, ASTM B-210.

HEAT TREATABLE ALLOYS
2024 Tubing – with copper as the principal alloying element, is a high strength aluminum tubing. It is often used in aircraft applications where strength is of primary importance. Conforms to Federal specificaton WW-T-700/3E, ASTM B-210.

6061 Tubing and Pipe – with double the strength of **3003-H13**, has widespread structural application. Workabiliy and corrosion resistance are good. It is weldable by all methods. Tubing conforms to Federal specification WW-T-700/6E and seamless pipe. Military specification MIL-P-25995. **6051** structural pipe conforms to ASTM B-429.

6063 Tubing and 6063 Pipe – are highly corrosion resistant with good weldability and workability. The finish is pleasing and is suitable for anodizing. Used primarily in architectural applications. In pipe form **6063** is used as a general utility pipe. Strength is approximately mid-way between **3003-H14** and **6061-T6**. Seamless pipe conforms to Military specification MIL-P-25995; structural pipe to ASTM B-429; tubing to Federal specification QQ-A-200/9.

ALUMINUM FLAT SHEET
1100-0

MILL FINISH – PAPER INTERLEAVED

QQ A 250/1 QQ A 561 AMS 4001

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.032x 36x 96	.452	10.84
.040x 36x 96	.565	13.55
48x 144	.565	27.09
.050x 36x 96	.706	16.93
48x 144	.706	33.87
.063x 36x 96	.889	21.34
48x 144	.889	42.67
.080x 48x 144	1.129	54.19
.090x 36x 96	1.270	30.48
.125x 36x 96	1.764	42.34

ALUMINUM FLAT SHEET
1100-H14

MILL FINISH

QQ A 250/2 QQ A 359 AMS 4006

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.012x 24x 72	.169	2.03
.016x 36x 96	.226	5.42
.020x 36x 96	.282	6.77
36x 120	.282	8.48
.025x 36x 96	.353	8.47
36x 120	.353	10.58
.032x 36x 96	.452	10.84
36x 120	.452	13.55
48x 144	.452	21.67
.040x 36x 96	.565	13.55
36x 120	.565	16.93
48x 144	.565	27.09
.050x 36x 96	.706	16.94
.050x 36x 120	.706	21.18
48x 144	.706	33.87
.063x 36x 96	.889	21.34
36x 120	.889	26.75
48x 144	.889	42.67
.080x 48x 144	1.129	54.19
.090x 36x 96	1.270	30.48
48x 144	1.270	60.96
.100x 48x 144	1.411	67.74
* .125x 36x 96	1.764	42.34
* 48x 120	1.764	70.56
* 48x 144	1.764	84.67
* .190x 48x 144	2.681	128.70

*Interleaved

ALUMINUM FLAT SHEET
1100-H25

ONE SIDE BRIGHT – MILL FINISH – PAPER INTERLEAVED

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.032x 36x 96	.452	10.85
.040x 36x 96	.565	13.55
.050x 36x 96	.706	16.94
.063x 36x 96	.889	21.34

ALUMINUM FLAT SHEET
3003-0

MILL FINISH – PAPER INTERLEAVED

QQ A 250/2 QQ A 359 AMS 4006

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.025x 36x 96	.356	8.55
.032x 36x 96	.456	10.95
.040x 48x 144	.570	27.37
.050x 48x 144	.713	34.21
.063x 36x 96	.898	21.55
48x 144	.898	43.11
.080x 48x 144	1.141	54.74
.090x 48x 144	1.283	61.59
.125x 48x 144	1.782	85.54

ALUMINUM FLAT SHEET
3003-H14

MILL FINISH - .125 and .190 PAPER INTERLEAVED

QQ A 250/2 QQ A 359 AMS 4008

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.016x 36x 96	.228	5.47
.020x 36x 96	285	6.84
36x 120	.285	8.55
.025x 36x 96	.356	8.55
36x 120	.356	10.69
48x 96	.356	11.39
48x 120	.356	14.24
48x 144	.356	17.10
.032x 36x 96	.456	10.95
36x 120	.456	13.69
48x 96	.456	14.60
48x 120	.456	18.25
48x 144	.456	21.90
.040x 36x 96	.570	13.68
36x 120	.570	17.11
48x 96	.570	18.24
48x 120	.570	22.81
48x 144	570	27.37
60x 144	.570	34.21
.050x 36x 96	.713	17.11
36x 120	.713	21.28
48x 96	.713	22.81
48x 120	.713	28.51
48x 144	.713	34.21
60x 144	.713	42.77
.063x 36x 96	.898	21.55
36x 120	.898	26.94
48x 96	.898	28.74
48x 120	.898	35.92
48x 144	.898	43.11
60x 144	.898	53.89
.080x 36x 96	1.141	27.37
48x 120	1.141	45.62
48x 144	1.141	54.74
60x 144	1.141	68.46
.090x 36x 96	1.283	30.79
48x 144	1.283	61.59
60x 144	1.283	76.98
.100x 36x 96	1.426	34.21
48x 144	1.426	68.43
60x 144	1.426	85.56
.125x 36x 96	1.782	42.76
36x 120	1.782	53.46
48x 120	1.782	71.28
48x 144	1.782	85.54
60x 144	1.782	106.92
72x 144	1.782	128.30
.190x 36x 96	2.709	65.00
48x 120	2.709	108.34
48x 144	2.709	130.00
60x 144	2.709	162.54

ALUMINUM FLAT SHEET
5005 H-34
MILL FINISH

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.032x 36x 120	.452	13.56	.063x 48x 120	.889	35.56
48x 120	.452	18.08	48x 144	.889	42.67
.040x 36x 120	.565	16.95	.080x 48x 144	1.129	54.19
48x 120	.565	22.60			
48x 144	.565	27.12	.090x 48x 144	1.270	60.96
.050x 48x 120	.706	28.24	*.125x 48x 120	1.764	70.56
48x 144	.706	33.92	* 48x 144	1.764	84.57
			*Paper Interleaved		

ALUMINUM FLAT SHEET
5052-0
MILL FINISH - .063 and HEAVIER INTERLEAVED - STENCILED
QQ A 250/8 QQ A 318 AMS 4015

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.032x 36x 96	.447	10.73	.063x 36x 96	.880	21.12
48x 144	.447	21.45	48x 144	.880	42.24
.040x 48x 144	.559	26.82	.080x 48x 144	1.117	53.64
			.090x 48x 144	1.257	60.34
.050x 48X 144	.698	33.52	.125x 48x 144	1.746	83.81
			.190x 48x 144	2.654	127.39

ALUMINUM FLAT SHEET
5052-H32 5052-H34
QQ-A-250/8 QQ-A-318 AMS 4016 AMS 4017

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.025x 36x 96	.349	8.38	.080x 36x 96	1.117	26.82
.032x 36x 96	.447	10.73	48x 120	1.117	35.74
48x 144	.447	21.45	48x 144	1.117	53.64
.040x 36x 96	.559	13.41	.090x 36x 96	1.257	30.17
48x 96	.559	17.88	48x 96	1.257	40.23
48x 144	.559	26.82	48x 144	1.257	60.34
.050x 36x 96	.698	16.76	.100x 48x 144	1.397	67.06
48x 96	.698	22.35	.125x 36x 96	1.746	41.90
48x 144	.698	33.52	48x 96	1.746	55.87
.062x 36x 96	.880	21.12	48x 144	1.746	83.81
48x 96	.880	28.16	72x 144	1.746	125.71
48x 120	.880	35.20	.160x 48x 96	2.235	107.28
48x 144	.880	42.24	.190x 36x 96	2.654	63.69
			48x 144	2.654	127.39

ALUMINUM FLAT SHEET
2024-O BARE
QQ-A-250/4 QQ-A-355 AMS 4035

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.032x 48x 144	.461	22.12	.071x 48x 144	1.022	49.08
.040x 48x 144	.576	27.65	.080x 48x 144	1.152	55.22
.050x 48x 144	.720	34.56	.090x 48x 144	1.296	62.21
.063x 48x 144	.907	43.55	.100x 48x 144	1.440	69.12
			.125x 48x 144	1.800	86.40

ALUMINUM FLAT SHEET
2024-T3 BARE 2024-T3 ALCLAD
MILL FINISH – PAPER INTERLEAVED – STENCILED
QQ-A-250/4 QQ-A-355 AMS 4037
QQ-A-250/5 QQ-A-362 AMS 4041

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.020x 36x 144	.288	10.37	.080x 48x 144	1.152	55.22
.025x 48x 144	.360	17.28	.090x 48x 144	1.296	62.21
.032x 48x 144	.461	22.12	.100x 48x 144	1.440	69.12
.040x 48x 144	.576	27.65	.125x 36x 96	1.800	43.20
.050x 48x 144	.720	34.56	48x 144	1.800	86.40
.063x 48x 144	.907	43.55	.160x 48x 144	2.300	110.59
.071x 48x 144	1.022	49.08	.190x 48x 144	2.736	131.33

ALUMINUM FLAT SHEET
6061-O

MILL FINISH – PAPER INTERLEAVED – STENCILED

QQ A 250/11 QQ A 327 AMS 4025

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.032x 48x 144	.452	21.67	.071x 48x 144	1.002	48.10
.040x 48x 144	.565	27.09	.080x 48x 144	1.129	54.19
.050x 48x 144	.706	33.87	.090x 48x 144	1.270	60.96
.063x 48x 144	.889	42.67	.100x 48x 144	1.411	67.73
			.125x 48x 144	1.764	84.67
			.190x 48x 144	2.681	128.70

ALUMINUM FLAT SHEET
6061-T6

MILL FINISH - PAPER INTERLEAVED - STENCILED

QQ A 250/11 QQ A 327 AMS 4027

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.025x 36x 144	.353	12.70	.100x 48x 144	1.411	67.74
.032x 48x 144	.452	21.67	.125x 36x 96	1.764	42.34
.040x 48x 144	.565	27.09	36x 144	1.764	63.50
.050x 48x 144	.706	33.87	48x 96	1.764	56.45
60x 144	.706	42.36	48x 144	1.764	84.67
.063x 36x 96	.889	21.34	60x 144	1.764	105.84
48x 144	.889	42.67	.160x 48x 144	2.258	108.38
60x 144	.889	53.34	.190x 36x 96	2.681	64.35
.080x 48x 144	1.129	54.19	48x 144	2.681	128.70
60x 144	1.129	67.92	60x 144	2.681	160.68
.090x 48x 144	1.270	60.96	72x 144	2.681	193.05
60x 144	1.270	76.20			

ALUMINUM FLAT SHEET
7075-O ALCLAD

MILL FINISH - PAPER INTERLEAVED - STENCILED

QQ A 250/13 QQ A 287 AMS 4048

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.025x 48x 144	.364	17.47	.063x 48x 144	.916	43.99
.032x 48x 144	.465	22.34	.071 48x 144	1.033	49.57
.040x 48x 144	.582	27.93	.125x 48x 144	1.818	87.26
.050x 48x 144	.727	34.90			

ALUMINUM FLAT SHEET
7075-T6 ALCLAD

MILL FINISH – PAPER INTERLEAVED – STENCILED

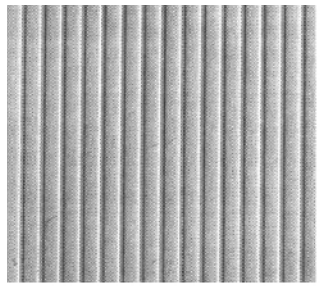
QQ A 250/13 QQ A 287 AMS 4049

Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.025x 48x 144	.364	17.47	.080x 48x 144	1.164	55.77
.032x 48x 144	.465	22.34	.090x 48x 144	1.309	62.83
.040x 48x 144	.582	27.93	.125x 48x 144	1.818	87.26
.050x 48x 144	.727	34.90	.190x 48x 144	2.763	132.64
.063x 48x 144	.916	43.99			

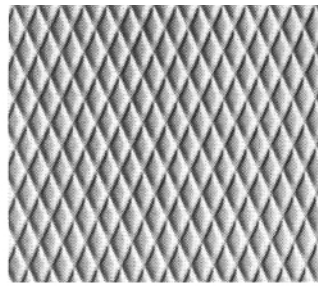
ALUMINUM PATTERN SHEET
3003-H114 MILL FINISH

STUCCO LEATHER GRAIN FLUTED DIAMOND

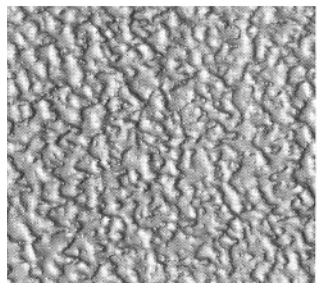
Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Weight. per Sheet in Lbs.
.025x 48x 144	.361	17.3	.040x 48x 144	.574	27.6
.032x 48x 144	.455	21.9	.050x 48x 144	.723	34.8



Fluted



Diamond



Stucco

Leather Grain

ALUMINUM PLATE
1100-F

MILL FINISH - PAPER INTERLEAVED - STENCILED
QQ A 250 / QQ A 561

Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.	Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.
¼ x 36x 144	3.53	84.67	½ x 36x 96	7.06	169.44
48x 144	3.53	169.34	48x 144	7.06	338.88
60x 144	3.53	211.80	¾ x 36x 96	10.58	253.92
⅜ x 48x 144	5.29	253.92	1 x 36x 96	14.11	338.64

ALUMINUM PLATE
3003-F

MILL FINISH - PAPER INTERLEAVED
QQ A 250/2 QQ A 359

Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.	Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.
¼ x 36x 96	3.56	85.44	¼ x 72x 144	3.56	256.32
48x 144	3.56	170.88	⅜ x 48x 144	5.346	256.61
60x 144	3.56	213.60	½ x 48x 144	7.13	342.14

ALUMINUM PLATE
5052-H32

MILL FINISH - PAPER INTERLEAVED - IDENTIFIED
QQ A 250/8 QQ A 318 AMS 4016

Thickness in Inches	Size in Inches	Approx. Wt. per Sq. Ft.	Approx. W. per Plate in Lbs.
¼	48x 144	3.49	167.82
⅜	48x 144	5.238	251.42
½	48x 144	6.984	335.23
¾	48x 144	10.476	502.85
1	48x 144	13.968	670.46

ALUMINUM PLATE
5083-H321

MILL FINISH – PAPER INTERLEAVED – STENCILED
QQ A 250/6

Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.	Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.
.250x 60X 180	3.456	259.20	.500x 60X 180	6.912	518.40
.375x 60X 180	5.184	388.80	.750x 60X 180	10.368	777.60
			1.000x 60X 180	13.824	1036.80

ALUMINUM PLATE
2024-T351 BARE

MILL FINISH – PAPER INTERLEAVED – STENCILED
1/2" and Heavier – Sawed 3/8" and Lighter – Sheared
QQ A 250/4 QQ A 355 AMS 4033

Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.	Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.
¼ x 36x 96	.360	86.40	1¼ x 36x 96	18.00	432.00
48x 144	.360	172.80	48x 144	18.00	864.00
5/16 x 48x 144	4.51	216.38	1½ x 36x 96	21.60	518.40
⅜ x 36x 96	5.40	129.60	48x 144	21.60	1036.80
48x 144	5.40	259.20	1¾ x 36x 96	25.20	604.80
½ x 36x 96	7.20	172.80	48x 144	25.20	1209.60
48x 144	7.20	345.60	2 x 36x 96	28.80	691.20
⅝ x 36x 96	9.00	216.00	48x 144	28.80	1382.40
48x 144	9.00	432.00	2½ x 36x 96	36.00	864.00
¾ x 36x 96	10.80	259.20	3 x 36x 96	43.20	1036.80
48x 144	10.80	518.40	4 x 48x 144	57.60	2764.80
⅞ x 36x 96	12.60	302.40	5* x 48x 144	72.00	3456.00
1 x 36x 96	14.40	345.60	6* x 48x 144	86.40	4127.20
48x 144	14.40	691.20			

*Above specifications do not apply to these two thicknesses

ALUMINUM PLATE
6061-T651

MILL FINISH - PAPER INTERLEAVE – STENCILED

QQ A 250/11 QQ A 327 AMS 4053

Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.
¼ x 36x 96	3.53	84.67
48x 144	3.53	169.34
60x 144	3.53	211.68
72x 144	3.53	254.08
5/16 x 36x 96	4.42	106.01
48x 144	4.42	212.02
⅜ x 36x 96	5.29	127.00
48x 144	5.29	254.01
60x 144	5.29	317.40
½ x 36x 96	7.06	169.34
48x 144	7.06	338.69
60x 144	7.06	423.60
⅝ x 36x 96	8.82	211.68
48x 144	8.82	423.36
60x 144	8.82	529.20
¾ x 36x 96	10.58	254.02
48x 144	10.58	508.03
60x 144	10.58	634.80
⅞ x 48x 48	12.35	592.70
1 x 36x 96	14.11	338.69
48x 144	14.11	677.38
60x 144	14.11	846.60
1¼ x 36x 96	17.64	423.36
48x 144	17.64	846.72
60x144	17.64	1058.40
1½ x 36x 96	21.17	508.04
48x 144	21.17	1016.16
60x144	21.17	1270.20
1¾ x 36x 96	24.70	592.70
48x 144	24.70	1185.60
60x144	24.70	1482.00
2 x 36x 96	28.22	677.38
48x 144	28.22	1354.75
60x 144	28.22	1693.20
2¼ x 48x 144	31.75	1524.00
2½ x 36x 96	35.28	846.44
48x 144	35.28	1693.44
3 x 36x 96	42.33	1015.92
48x 144	42.33	2031.84
4 x 36x 96	56.44	1354.56
48x 144	56.44	2709.12
4½ x 48x 144	63.50	3048.00
5 x 48x 144	70.56	3386.88
6 x 48x 144	84.66	4063.68

ALUMINUM PLATE
7075-T651 BARE

MILL FINISH – OILED – STENCILED

QQ A 250/12 QQ A 283 AMS 4038

Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.
¼ x 48x 144	3.64	174.53
⅜ x 48x 144	5.45	261.80
½ x 48x 144	7.27	348.96
⅝ x 36x 96	9.09	218.16
¾ x 48x 144	10.91	523.68
1 x 48x 144	14.54	689.12
1¼ x 48x 144	18.18	872.64
1½ x 48x 144	21.82	1047.36
1¾ x 36x 96	25.45	610.85
2 x 36x 96	29.09	698.11
48x 144	29.09	1396.22
2½ x 48x 144	36.35	1744.80
3 x 48x 144	43.62	2093.76
4 x 48x 144	58.18	2792.64

ALUMINUM DIAMOND TREAD PLATE
6061-T6

MILL FINISH

Thickness in Inches	Size in Inches	Weight per Sq. Ft. in Lbs.	Thickness in Inches	Size in Inches	Weight per Sq. Ft. in Lbs.
.100*	48x 192	1.57	**3/16**	60x 192	2.80
1/8* **	48x 192	1.90	**1/4**	48x 192	3.70
	60x 192	1.90		60x 192	3.70
3/16 **	48x 192	2.80	**3/8**	48x 192	5.51

* Also available as 6061 Bright Tread Plate
** Also available as 5052-H32 Tread Plate

CAST ALUMINUM
TOOL AND JIG PLATE

Cast Stress Relieved and Machined

Both surfaces of this plate machined to 25 micro-inches or less. Thickness tolerance plus or minus .005 in. This material is porosity free and stress-relieved.

Typical uses are, for making stretch-forming dies, rubber pad process form blocks, assembly jigs, locating devices, drill jigs, pattern and core plates and inspection fixtures.

Thickness and Size in Inches	Approx. Wt. per Sq. Ft.	Approx. Wt. per Plate in Lbs.
¼x 48x 96	3.336	116
5/16x 48x 96	4.545	145
⅜x 48x 96	5.454	175
½x 48x 96	7.272	233
48x 144	7.272	349
⅝x 48x 96	9.090	291
48x 144	9.090	436
¾x 48x 96	10.91	349
48x 144	10.91	524
1 x 48x 96	14.54	465
48x 144	14.54	698
1¼x 48x 96	18.18	582
48x 144	18.18	873
1½x 48x 96	21.82	698
48x 144	21.82	1047
1¾x 48x 96	25.45	814
48x 144	25.45	1222
2 x 48x 96	29.09	931
48x 144	29.09	1396
2½x 48x 96	36.36	1164
48x 144	36.36	1745
3 x 48x 96	43.63	1396
48x 144	43.63	2094
3½x 48x 96	50.90	1629
48x 144	50.90	2443
4 x 48x 96	58.18	1862
48x 144	58.18	2792
5* x 48x 144	72.72	3491
6* x 48x 144	87.26	4189

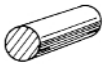
ALSO AVAILABLE

WROUGHT ALUMINUM TOOLING PLATE

Interleaved and Identified – Sawed Edges

QQ A 250/11 QQ A 327

A wrought heat-treated product suitable stretcher stress relieved for minimum distortion during machining, and where moderately high mechanical properties are an important consideration.

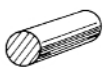


ALUMINUM ROUNDS
1100-F

QQ A 225/1 QQ A 411 AMS 4102

12 FOOT STNDARD LENGTHS

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
* 1/8	.015	.180	7/16	.177	2.12	1 1/2	2.076	24.91
** 3/16	.032	.384	1/2	.231	2.77	1 3/4	2.826	33.91
*** 1/4	.058	.696	9/16	.292	3.50	1 7/8	3.244	38.93
† 5/16	.090	1.080	5/8	.360	4.32	2	3.691	44.29
3/8	.130	1.560	3/4	.519	6.23	2 1/4	4.671	56.05
* 1100-H19			7/8	.706	8.47	2 1/2	5.767	69.20
** 1100-H18			1	.923	11.08	3	8.304	99.65
*** 1100-H16			1 1/4	1.442	17.30	3 1/2	11.301	135.61
† 1100-H14			1 3/8	1.745	20.94	4	14.763	177.16



ALUMINUM ROUNDS

SCREW MACHINE STOCK

2011-T3

12 FOOT STANDARD LENGTHS QQ A 225/3 QQ A 365

Size in Inches	Approx. Weight. per Ft. in Lbs.	Est. 12' Bar	Size in Inches	Approx. Weight. per Ft. in Lbs.	Est. 12' Bar
1/8	.015	.180	1 1/8	1.220	14.64
5/32	.023	.276	1 3/16	1.350	16.20
3/16	.034	.408	1 1/4	1.490	17.88
7/32	.046	.552	1 5/16	1.660	19.92
1/4	.060	.720	1 3/8	1.810	21.72
9/32	.076	.912	1 7/16	2.000	24.00
5/16	.094	1.128	1 1/2	2.160	25.92
11/32	.113	1.356	1 9/16	2.340	28.08
3/8	.135	1.620	1 5/8	2.530	30.36
13/32	.159	1.908	1 11/16	2.740	32.88
7/16	.184	2.21	1 3/4	2.950	35.40
15/32	.210	2.52	1 13/16	3.150	37.80
1/2	.240	2.88	1 7/8	3.370	40.44
17/32	.271	3.52	1 15/16	3.590	43.08
9/16	.305	3.66	2	3.840	46.08
19/32	.338	4.06	2 1/8	4.340	52.08
5/8	.375	4.50	2 1/4	4.860	58.32
21/32	.414	4.97	2 5/16	5.140	61.68
11/16	.454	5.45	2 3/8	5.410	64.92
23/32	.496	5.95	2 1/2	6.000	72.00
3/4	.540	6.48	2 9/16	6.300	75.60
25/32	.586	7.03	2 5/8	6.610	79.30
13/16	.633	7.60	2 3/4	7.260	87.12
7/8	.735	8.82	3	8.640	103.68
15/16	.845	10.14	3 1/8	9.370	112.44
1	.960	11.52	3 1/4	10.136	121.63
1 1/16	1.080	12.96			

ALUMINUM ROUNDS

SCREW MACHINE STOCK

2017-T4 2017-T451

2017-T4 QQ A 225/5 QQ A 351 AMS 4118

2017-T451 QQ A 225/5

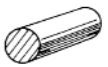
Lengths: Up to 4½" inclusive – 12 Feet

4¾" and over – 8-12 Foot Random

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
1/8	.015	.180	1	.951	11.41	2 5/16	5.082	60.98
5/32	.023	.278	1 1/16	1.073	12.88	2 3/8	5.361	64.33
3/16	.033	.396	1 1/8	1.203	14.44	2 1/2	5.940	71.28
7/32	.046	.552	1 3/16	1.340	16.08	2 9/16	6.240	74.88
1/4	.059	.708	1 1/4	1.485	17.82	2 5/8	6.549	78.59
9/32	.075	.900	1 5/16	1.637	19.64	2 3/4	7.187	86.24
5/16	.093	1.116	1 3/8	1.797	21.56	2 7/8	7.855	94.26
3/8	.134	1.608	1 7/16	1.964	23.57	3	8.533	102.64
13/32	.157	1.884	1 1/2	2.138	25.66	3 1/8	9.281	111.37
7/16	.182	2.18	1 9/16	2.320	27.84	3 1/4	10.038	120.46
1/2	.238	2.86	1 5/8	2.509	30.11	3 3/8	10.825	129.90
9/16	.302	3.62	1 11/16	2.706	32.47	3 1/2	11.642	139.70
19/32	.335	4.02	1 3/4	2.910	34.92	3 3/4	13.365	160.38
5/8	.372	4.46	1 13/16	3.122	37.46	4	15.206	182.47
21/32	.410	4.92	1 7/8	3.341	40.09	4 1/4	17.166	205.99
11/16	.449	5.39	1 15/16	3.568	42.82	4 1/2	19.245	230.94
23/32	.491	5.89	2	3.802	45.62	4 3/4	21.443	257.32
3/4	.536	6.43	2 1/16	4.043	48.52	5	23.759	285.11
13/16	.627	7.52	2 1/8	4.291	51.49	5 1/2	28.839	246.07
7/8	.728	8.74	2 3/16	4.548	54.58	6	34.213	410.56
15/16	.836	10.03	2 1/4	4.811	57.73	7	46.568	558.82
						8	60.822	729.86

*T4 Temper only

ALUMINUM ROUNDS
7056-T6 7075-T651



7075-T6 QQ A 225/9 QQ A 282 AMS 4122

7075-T651 QQ A 225/9 AMS 4123

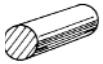
Lengths: Up to 4½" Inclusive – 12 Feet

4¾" and over – 8 - 12 Foot Random

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
* 3/8	.134	1.61	1 3/4	2.91	34.92	4	15.20	182.40
* 1/2	.238	2.86	2	3.80	45.60	** 4 1/4	17.17	206.04
3/4	.535	6.42	2 1/2	5.94	71.28	** 4 1/2	19.25	230.94
1	.950	11.40	2 3/4	7.19	86.28	** 4 3/4	21.44	257.32
1 1/8	1.20	14.40	3	8.55	102.60	** 5	23.76	285.11
1 1/4	1.48	17.76	3 1/4	10.04	120.48	** 5 1/4	26.19	314.33
1 3/8	1.79	21.48	3 1/2	11.64	139.68	** 5 1/2	28.84	346.07
1 1/2	2.14	25.68	3 3/4	13.37	160.44	** 6	34.21	410.56

* These sizes T6 Temper.

** Above specifications do not apply to these sizes.



ALUMINUM ROUNDS

SCREW MACHINE STOCK

2024-T4 2024-T351

Under ¾" Dia. – 2024-T4; ¾" to 6½" Dia. Incl. – 2024-T351

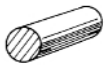
2024-T4 QQ A 225/6 QQ A 268 AMS 4120

2024-T351 QQ A 225/6 AMS 4119

LENGTHS: UP TO 4½" INCLUSIVE – 12 FT.

4¾" AND OVER – 8 - 12 FT. RANDOM

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
⅛	.015	.180	1¼	1.47	17.64	3	8.47	101.64
3/16	.033	.396	1 5/16	1.62	19.44	3⅛	9.19	110.28
¼	.059	.708	1⅜	1.77	21.24	3¼	9.93	119.16
5/16	.092	1.104	1 7/16	1.95	23.40	3⅜	10.72	128.64
⅜	.132	1.584	1½	2.12	25.44	3½	11.53	138.36
7/16	.180	2.16	1 9/16	2.30	27.60	3¾	13.23	158.76
½	.235	2.82	1⅝	2.49	29.88	4	15.06	180.72
9/16	.298	3.58	1¾	2.88	34.56	4¼	17.00	204.00
⅝	.367	4.40	1⅞	3.31	39.72	4½	19.05	228.60
11/16	.445	5.34	2	3.76	45.12	4¾	21.24	254.88
¾	.529	6.35	2⅛	4.25	51.00	5	23.53	282.36
13/16	.621	7.45	2¼	4.76	57.12	5¼	25.94	311.28
⅞	.720	8.64	2⅜	5.31	63.72	5½	28.56	342.72
15/16	.827	9.92	2½	5.88	70.56	6	33.88	406.56
1	.941	11.29	2⅝	6.49	77.88	6½	39.76	477.12
1 1/16	1.06	12.72	2¾	7.12	85.44	7	45.21	542.52
1⅛	1.19	14.28	2⅞	7.78	93.36	8	60.23	722.76
1 3/16	1.32	15.84						



ALUMINUM ROUNDS

SCREW MACHINE STOCK

6061-T6 6061-T651

Under ¾" Dia. – 6061-T6; ¾" Dia. & Over – 6061-T651

6061-T6 QQ A 225/8 QQ A 325 AMS 4117

6061-T651 QQ A 225/8

LENGTHS: UP TO 4½" INCLUSIVE – 12 FT.

4¾" AND OVER – 8 - 12 FT. RANDOM

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
⅛	.015	.180	1 1/16	1.041	12.50	2⅜	5.20	62.40
3/16	.033	.396	1⅛	1.17	14.04	2¾	6.98	83.76
¼	.058	.696	1 3/16	1.30	15.55	3	8.30	99.60
5/16	.090	1.080	1¼	1.44	17.28	3¼	9.75	117.00
⅜	.130	1.560	1 5/16	1.59	19.08	3½	11.30	135.60
7/16	.177	2.12	1⅜	1.74	20.88	3¾	12.98	155.76
½	.230	2.76	1 7/16	1.92	23.04	4	14.76	177.12
9/16	.291	3.49	1½	2.08	24.96	4½	18.68	224.16
⅝	.360	4.32	1⅝	2.44	29.28	5	23.07	276.84
11/16	.436	5.23	1¾	2.83	33.96	5½	28.00	336.00
¾	.519	6.23	1⅞	3.24	38.88	6	33.22	398.64
13/16	.608	7.30	2	3.69	44.28	6½	38.98	467.76
⅞	.706	8.47	2⅛	4.17	50.04	7	45.21	542.52
15/16	.811	9.73	2¼	4.67	56.04	8	59.05	708.60
1	.922	11.06						

ALUMINUM HEXAGONS

SCREW MACHINE STOCK

2011-T3

QQ A 225/3 QQ A 365

12 FT. STANDARD LENGTHS

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
¼	.066	.792	⅝	.414	4.97	1⅛	1.338	16.060
5/16	.104	1.248	11/16	.500	6.00	1¼	1.651	19.810
⅜	.149	1.778	¾	.595	7.14	1⅜	2.000	24.000
7/16	.203	2.44	13/16	.699	8.39	1½	2.382	28.584
½	.265	3.18	⅞	.810	9.72	1¾	3.254	39.048
9/16	.335	4.02	15/16	.929	11.15	2	4.236	50.832
			1	1.057	12.68			

ALUMINUM HEXAGONS

SCREW MACHINE STOCK

2017-T4 2017-T451

Under ¾" Hex. – 2017-T4 ¾" Hex. & Over – 2017-T451

2017-T4 QQ A 225/5 QQ A 351 e AMS 4118

2017-T451 QQ A 225/5

12 FT. STANDARD LENGTHS

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
3/16	.037	.444	13/16	.692	8.30	1 1/16	2.163	25.96
¼	.065	.780	⅞	.802	9.62	1½	2.355	28.26
5/16	.102	1.224	1	1.047	12.56	1⅝	2.767	33.20
⅜	.147	1.764	1 1/16	1.182	14.18	1¾	3.203	38.44
7/16	.201	2.41	1⅛	1.325	15.90	1⅞	3.684	44.21
½	.262	3.14	1 3/16	1.476	17.71	2	4.192	50.30
9/16	.333	4.00	1¼	1.635	19.62	2¼	5.305	63.66
⅝	.409	4.91	1 5/16	1.803	21.64	2½	6.549	78.59
¾	.589	7.07	1⅜	1.979	23.72	3	9.431	113.17

ALUMINUM HEXAGONS

SCREW MACHINE STOCK

2024-T4 2024-T351

Under 11/16" Hex. – 2024-T4 11/16" Hex. & Over – 2024-T351

2024-T4 QQ A 225/6 QQ A 268 AMS 4120

2024-T351 QQ A 225/6 AMS 4119

12 FT. STANDARD LENGTHS

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
3/16	.037	.444	11/16	.491	5.89	1⅝	2.740	32.88
¼	.064	.768	¾	.584	7.01	1¾	3.178	38.14
5/16	.117	1.404	⅞	.795	9.54	1⅞	3.648	43.78
⅜	.146	1.752	15/16	.913	10.96	2	4.151	49.81
7/16	.199	2.39	1	1.037	12.44	2¼	5.253	63.04
½	.259	3.11	1¼	1.620	19.44	2½	6.486	77.83
9/16	.328	3.94	1⅛	1.312	15.74	2¾	7.848	94.18
⅝	.405	4.86	1⅜	1.960	23.52	3	9.340	112.08
			1½	2.332	27.94			

ALUMINUM HEXAGONS

SCREW MACHINE STOCK

6061-T6 6061-T651

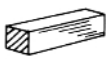
Under ¾" Dia. – 6061-T6

¾" Dia. and over 6061-T651

QQ A 225/8 QQ A 325

12 FT. STANDARD LENTGHS

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
¼	.064	.768	1⅛	1.288	15.46
⅜	.143	1.716	1¼	1.568	18.82
½	.254	3.05	1⅜	1.916	22.99
⅝	.397	4.77	1½	2.286	27.43
¾	.572	6.87	1¾	3.124	37.49
1	1.017	12.20	2	4.067	48.80



ALUMINUM SQUARES

2017-T4 2017-T451

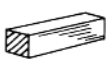
Under ½" SQ. – 2017-T4; ½" Sq. & Over – 2017-T451

2017-T4 QQ A 225/5 QQ A 351 AMS 4118

2017-T451 QQ A 225/5 QQ A 351 AMS 4110

12 FT. STANDARD LENGTHS – Sharp Corners

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
¼	.073	.876	⅝	.473	5.68	1¼	1.891	22.69
⅜	.170	2.04	¾	.681	8.17	1½	2.722	32.66
7/16	.232	2.78	⅞	.926	11.11	2	4.840	58.08
½	.303	3.64	1	1.210	14.52			



ALUMINUM SQUARES

2024-T4 2024-T351

Under ½" SQ. – 2024-T4; ½" Sq. & Over – 2024-T351

2024-T4 QQ A 225/6 QQ A 268 AMS 4120

2024-T351 QQ A 225/6 AMS 4119

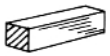
Sharp Corners

LENGTHS – UP TO 2" INCLUSIVE – 12 FT.

OVER 2" – 8 - 12 FT. RANDOM

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
¼	.075	.900	⅞	.917	11.00	2¼	6.076	72.19
⅜	.169	2.03	1	1.193	14.40	2½	7.500	90.00
7/16	.229	2.75	1⅛	1.517	18.24	2¾	9.076	108.91
½	.300	3.60	1¼	1.872	22.44	3	10.800	129.60
9/16	.380	4.55	1½	2.696	32.40	3¼	12.658	151.92
⅝	.469	5.62	1¾	3.670	44.04	3½	14.678	176.16
¾	.674	8.09	2	4.793	57.48	4	19.176	230.16

ALUMINUM SQUARES
6063-T5 (Extruded)



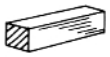
QQ A 200/9

16 FT. STANDARD LENGTHS – Sharp Corners

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
* ⅜	.168	2.688	⅝	.468	7.49	1¼	1.875	30.00
½	.300	4.80	¾	.674	10.78	1½	2.700	43.20
			1	1.200	19.20	2	4.800	76.80

*These sizes stocked 6063-T52

ALUMINUM SQUARES
7075-T651



QQ A 225/9 QQ A 282 AMS 4123

12 FT. STANDARD LENGTHS – Sharp Corners

Size in Inches	Wt. per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Wt. per Ft. in Lbs.	Est.Wt. 12' Bar
¾	.681	8.172	1¾	3.706	44.47
1	1.210	14.52	2	4.840	58.08
1½	2.723	32.68			

ALUMINUM RECTANGLES
7075-T6 7075-T651

Under ½" Thick – 7075-T6; ½" Thick & Over – 7075-T651

7075-T6	QQ A 225/9	QQ A 282	AMS 4122
7075-T651	QQ A 225/9	QQ A 282	AMS 4123

12 FT. STANDARD LENGTHS – Sharp Corners

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar	Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
¼ x 1½	.454	5.45	* 1¼ x 3	4.538	54.46
⅜ x 1	.454	5.45	* 1½ x 2½	4.538	54.46
½ x 1½	.907	10.88	* 4	7.260	87.12
4	2.421	29.05	* 2 x 2½	6.050	72.60
¾ x 3	2.722	32.66	* 3	7.260	87.12
1 x 1¾	2.118	25.42	* 4	9.680	116.16
2	2.421	29.05	* 6	14.521	174.25
3	3.630	43.56	* 2½ x 4	12.100	145.20
4	4.840	58.08	* 6	18.151	217.81
			* 3 x 4	14.521	174.25
			* 4½	16.336	196.03
			* 6	21.780	261.36

*8 to 12 Ft. Random Lengths.

ALUMINUM RECTANGLES
2024-T4 2024-T351

Under ½" Thick – 2024-T4; ½" Thick & Over – 2024-T351

2024-T4 QQ A 225/6 QQ A 261 AMS 4120

2024-T351 QQ A 225/6 AMS 4119

12 FT. STANDARD LENGTHS – Sharp Corners

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
⅛ x ½	.075	.900
⅝	.094	1.128
¾	.112	1.344
1	.150	1.800
1¼	.187	2.24
1½	.225	2.70
2	.300	3.60
3/16 x ½	.112	1.34
⅝	.140	1.68
¾	.169	2.03
1	.225	2.70
1¼	.281	3.37
1½	.337	4.04
2	.449	5.39
¼ x ½	.156	1.872
⅝	.187	2.24
¾	.225	2.70
⅞	.262	3.14
1	.300	3.60
1¼	.374	4.49
1½	.449	5.39
2	.599	7.19
2½	.749	8.99
3	.900	10.88
4	1.198	14.38
5/16 x ½	.187	2.24
⅝	.234	2.81
¾	.281	3.37
1	.374	4.49
1½	.562	6.74
2	.749	8.99
⅜ x ½	.225	2.70
⅝	.281	3.37
¾	.337	4.04
1	.449	5.39
1¼	.562	6.74
1½	.674	8.09
1¾	.786	9.43
2	.899	10.79
2½	1.123	13.48
3	1.348	16.18
4	1.797	21.56
6	2.696	32.35
½ x ⅝	.374	4.49
¾	.449	5.39
⅞	.524	6.29
1	.599	7.19
1¼	.749	8.99
1½	.899	10.79
1¾	1.048	12.58
2	1.198	14.38
2½	1.498	17.98
½ x 3	1.787	21.56
4	2.397	28.76
6	3.595	43.14
* 8	4.793	57.52
⅝ x ¾	.532	6.74
⅞	.656	7.87
1	.747	8.96
1¼	.936	11.23
1½	1.123	13.48
2	1.498	17.98
¾ x 1	.899	10.79
1¼	1.123	13.48
1½	1.348	16.18
1¾	1.542	18.50
2	1.797	21.56
2½	2.247	26.96
3	2.696	32.35
3½	3.146	37.75
4	3.594	43.13
* 6	5.392	64.70
1 x 1¼	1.490	17.88
1½	1.797	21.56
1¾	2.097	25.16
2	2.397	28.76
2½	2.996	35.95
3	3.595	43.14
* 3½	4.194	50.33
* 4	4.793	57.52
* 5	5.99	71.88
* 6	7.190	86.28
1¼ x 1½	2.247	26.96
2	2.996	35.95
2½	3.745	44.94
* 3	4.494	53.93
3½	5.242	62.90
1½ x 2	3.505	43.14
* 2½	4.494	53.93
* 3	5.392	64.70
* 4	7.190	86.28
* 6	10.785	129.42
* 2 x 2¼	5.398	64.78
* 2½	5.992	71.90
* 3	7.190	86.28
* 4	9.586	115.03
* 6	14.380	172.56
* 2¼ x 4	10.785	129.42
* 2½ x 4	11.983	143.80
* 4½	13.481	161.77
* 5	14.979	179.75
* 6	17.974	215.69
* 2¾ x 4	13.181	158.17
* 3 x 4	14.380	172.56
6	21.569	258.83

*8 to 12 Ft. Random Lengths.

ALUMINUM RECTANGLES
6061-T6 6061-T6511
Extruded

Under ½" Thick – 6061-T6; ½" Thick & Over – 6061-T6511

QQ A 200/8 QQ A 270

12 FT. STANDARD LENGTHS – Sharp Corners

Size in Inches	Approx. Weight per Ft. in Lbs.	Est.Wt. 12' Bar
⅛ x ¾	.113	1.356
1	.147	1.764
1¼	.187	2.244
1½	.225	2.70
2	.294	3.528
3/16 x ¾	.165	1.980
1	.220	2.64
1¼	.282	3.384
1½	.331	3.97
2	.441	5.29
3	.677	8.12
¼ x ¾	.225	2.70
1	.294	3.53
1¼	.367	4.40
1½	.441	5.29
2	.587	7.04
3	.881	10.57
4	1.20	14.40
5	1.500	18.00
5/16 x ¾	.280	3.36
1	.374	4.48
1½	.562	6.74
2	.749	8.99
3	1.123	13.48
⅜ x ½	.220	2.64
¾	.330	3.96
1	.441	5.29
1¼	.551	6.61
1½	.625	7.50
2	.881	10.57
2½	1.126	13.51
3	1.322	15.86
4	1.762	21.14
6	2.642	31.72
½ x ¾	.450	5.40
1	.587	7.04
1½	.900	10.80
1¾	1.050	12.60
2	1.175	14.10
2½	1.469	17.63
½ x 3	1.762	21.14
4	2.350	28.20
5	3.000	36.00
6	3.524	42.29
⅝ x 1	.750	9.00
1½	1.124	13.49
2	1.500	18.00
¾ x 1	.881	10.57
1¼	1.126	13.51
1½	1.350	16.20
2	1.762	21.14
2½	2.250	27.00
3	2.533	30.40
4	3.600	43.20
6	5.400	64.80
1 x 1½	1.800	21.60
2	2.350	28.20
2½	3.000	36.00
3	3.600	43.20
4	4.700	56.40
6	7.200	86.40
1¼ x 1½	2.250	27.00
2	2.937	35.24
3¾	5.62	67.44
4	6.000	72.00
4½	6.75	81.00
5½	8.25	99.00
1½ x 2	3.600	43.20
2½	4.406	52.87
3	5.287	63.44
4	7.200	86.40
6	10.573	126.88
6½	11.70	140.40
1¾ x 3¾	7.88	94.56
4½	9.45	113.40
5½	11.55	138.60
2 x 3	7.20	86.40
2 x 6½	15.60	187.20
3 x 4	14.400	172.80

ALUMINUM RECTANGLES
6063-T5 (Extruded) QQ A 200/9

16 FT. STANDARD LENGTHS – Sharp Corners

Size in Inches	Approx. Wt. per Ft. in Lbs.	Est.Wt. 16' Bar
⅛ x *½	.075	1.20
*⅝	.094	1.50
*¾	.113	1.81
*1	.150	2.40
*1¼	.187	2.99
*1½	.226	3.62
*1¾	.263	4.21
*2	.300	4.80
3/16 x *½	.113	1.81
*¾	.169	2.70
*1	.226	3.62
*1¼	.282	4.51
*1½	.338	5.51
*2	.451	7.22
*2½	.564	9.02
¼ x *½	.150	2.40
*⅝	.187	2.99
*¾	.225	3.60
*1	.300	4.80
*1¼	.374	5.98
*1½	.450	7.20
*1¾	.525	8.40
*2	.600	9.60
* ¼ x *2½	.750	12.00
* *3	.900	14.40
* ⅜ x *½	.224	3.58
* *⅝	.281	4.50
* *¾	.338	5.41
* *1	.450	7.20
* *1¼	.563	9.01
* *1½	.675	10.80
* *2	.900	14.40
* *2½	1.126	18.02
* *3	1.350	21.60
* ½ x ¾	.450	7.20
1	.600	9.60
1¼	.750	12.00
1½	.900	14.40
2	1.200	19.20
2½	1.500	24.00
3	1.800	28.80
¾ x 1½	1.350	21.60
2	1.800	28.80
1 x 1½	1.800	28.80
2	2.400	38.40

*These sizes stocked as 6063-T52

ALUMINUM CHANNELS
AMERICAN STANDARD 6061-T6 (Extruded)

QQ A 200/8 QQ A 270 25 FT. LENGTHS

Size in Inches	Flange Width	Approx. Wt. per Ft. Lbs.
3 x .170	1.410	1.42
3 x .258	1.498	1.73
3 x .356	1.596	2.07
4 x .190	1.580	1.84
4 x .247	1.647	2.15
4 x .320	1.720	2.50
5 x .190	1.750	2.31
5 x .325	1.885	3.10
5 x .472	2.032	3.97
6 x .200	1.920	2.83
6 x .225	1.945	3.00
6 x .314	2.034	3.62
6 x .437	2.157	4.49
7 x .230	2.110	3.53
8 x .250	2.290	4.25
8 x .487	2.527	6.47
9 x .230	2.430	4.60
10 x .240	2.600	5.28
12 x .300	2.960	7.41
12 x .387	3.047	8.64
12 x .510	3.170	10.37

*Various sizes also available in Aluminum Association design.

ALUMINUM TEES AND ZEES
6061-T6 (Extruded) QQ A 200/8
TEES AND ZEES*

Size in Inches	Wt. per Ft. Lbs.	Stock Lengths
1 x 1 x ⅛	.320	22 Ft.
1½ x 1¼ x ⅛	.450	22 Ft.
1½ x 1½ x 3/16	.700	22 Ft.
1½ x 1½ x ¼	.890	22 Ft.
2 x 2 x ¼	1.260	25 Ft.
*3 x ¼ x 2 11/16	2.330	25 Ft.

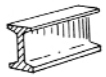
ALUMINUM ANGLES
6061-T6 (Extruded)

QQ A 200/8 QQ A 270

25 FT. LENGTHs

Size in Inches	Wt. per Ft. Lbs
¾ x ¾ x ⅛	.20
1 x 1 x ⅛	.27
1 x 1 x 3/16	.40
1 x 1 x ¼	.51
1¼ x 1¼ x ⅛	.35
1¼ x 1¼ x 3/16	.51
1¼ x 1¼ x ¼	.66
1½ x 1¼ x ⅛	.39
1½ x 1¼ x 3/16	.56
1½ x 1¼ x ¼	.74
1½ x 1½ x ⅛	.43
1½ x 1½ x 3/16	.62
1½ x 1½ x ¼	.81
1¾ x 1¼ x ⅛	.43
1¾ x 1¼ x 3/16	.62
1¾ x 1¼ x ¼	.81
1¾ x 1¾ x ⅛	.49
1¾ x 1¾ x 3/16	.73
1¾ x 1¾ x ¼	.95
2 x 1½ x ⅛	.49
2 x 1½ x 3/16	.73
2 x 1½ x ¼	.95
2 x 2 x ⅛	.57
2 x 2 x 3/16	.84
2 x 2 x ¼	1.11
2 x 2 x ⅜	1.60
2½ x 2 x 3/16	.96
2½ x 2 x ¼	1.25
2½ x 2½ x 3/16	1.07
2½ x 2½ x ¼	1.41
2½ x 2½ x 5/16	1.73
2½ x 2½ x ⅜	2.05
3 x 2 x 3/16	1.07
3 x 2 x ¼	1.40
3 x 2 x ⅜	2.05
3 x 2½ x ¼	1.53
3 x 3 x 3/16	1.29
3 x 3 x ¼	1.68
3 x 3 x 5/16	2.08
3 x 3 x ⅜	2.47
3½ x 2½ x ¼	1.68
3½ x 2½ x 5/16	2.08
3½ x 3½ x ¼	1.99
3½ x 3½ x 5/16	2.45
4 x 3 x ¼	1.99
4 x 3 x ⅜	2.92
4 x 4 x ¼	2.28
4 x 4 x 5/16	2.82
4 x 4 x ⅜	3.36
5 x 3 x ⅜	3.35
5 x 3½ x ½	4.70
5 x 5 x ⅜	4.28
5 x 5 x ½	5.58
6 x 4 x ⅜	4.24
6 x 4 x ½	5.58
6 x 6 x ½	6.75
8 x 8 x ½	9.14

ALUMINUM "I" BEAMS
6061-T6* (Extruded)

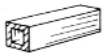


QQ A 200/8 QQ A 270

25 FT. LENGTHS

Size in Inches	Flange Width	Approx. Wt. per Ft. Lbs.
3 x .170	2.330	1.96
3 x .349	2.509	2.59
4 x .190	2.660	2.64
* 4 x .313	4.000	4.70
4 x .326	2.796	3.28
5 x .210	3.000	3.42
5 x .494	3.284	5.09
6 x .230	3.300	4.30
**6 x .230	4.000	4.16
**6 x .240	6.000	5.40
6 x .343	3.430	5.09

* H Beam.
** WF Beam.



ALUMINUM SQUARE TUBE
6063-T52 (Extruded) Sharp Corners

21 FT. – 1 IN. LENGTHS

O.D.	Wall Thickness	Weight per Ft. in Lbs.	O.D.	Wall Thickness	Weight per Ft. in Lbs.
¾	.062	.205	1¾	.125	.974
¾	.125	.376	2	.125	1.126
1	.125	.526	3	.125	1.726
1¼	.125	.674	2	.125	2.326
1½	.125	.825			

ALUMINUM RECTANGULAR TUBE
6063-T52 (Extruded) Sharp Corners

21 FT. – 1 IN. LENGTHS

O.D.	Wall Thickness	Weight per Ft. in Lbs.	O.D.	Wall Thickness	Weight per Ft. in Lbs.
½ x 1	.125	.383	1¾ x 3½	.125	1.486
¾ x 1½	.125	.604	1¾ x 4	.125	1.633
1 x 1½	.125	.677	1¾ x 4½	.125	1.780
1 x 2	.125	.824	1¾ x 5	.125	1.927
1¼ x 2½	.125	1.045	2 x 3	.125	1.412
1½ x 2	.125	.971	2 x 5	.125	2.000
1¾ x 3	.125	1.339			

ALUMINUM ROUND TUBING
3003-H14

WW T 700/2 WW T 788 AMS 4067

12 FT. LENGTHS

O.D.	Gauge	Wall Thickness	Weight per Ft. in Lbs.	O.D.	Gauge	Wall Thickness	Weight per Ft. in Lbs.
¼	24	.022	.019	1	20	.035	.126
	20	.035	.028		18	.049	.174
⅜	24	.022	.029		17	.058	.204
	20	.035	.044		16	.065	.226
	16	.065	.075	1¼	20	.035	.159
½	22	.028	.049		18	.049	.219
	20	.035	.061		17	.058	.259
	18	.049	.083		16	.065	.287
	16	.065	.105	1½	20	.035	.191
⅝	20	.035	.077		18	.049	.266
	18	.049	.105		16	.065	.347
	16	.065	.135	1¾	20	.035	.224
¾	20	.035	.093		18	.049	.311
	18	.049	.128		16	.065	.408
	17	.058	.149	2	20	.035	.257
	16	.065	.166		18	.049	.357
⅞	20	.035	.110		16	.065	.469
	18	.049	.150	2½	18	.049	.447
	16	.065	.196		16	.065	.585
				3	16	.065	.707

ALUMINUM ROUND TUBING
2024-T3

WW T 700/3 WW T 785 AMS 4088

12 FT. LENGTHS

O.D.	Stubs Gauge No.	Wall Thickness	Weight per Ft. in Lbs.	O.D.	Stubs Gauge No.	Wall Thickness	Weight per Ft. in Lbs.
¼	20	.035	.0284		16	.065	.2285
5/16	18	.049	.0487		13	.095	.3240
⅜	18	.049	.0602	1¼	18	.049	.2213
½	20	.035	.0612		16	.065	.2850
⅝	18	.049	.1061	1½	20	.035	.1928
	16	.065	.1367		18	.049	.2683
¾	20	.035	.0938		16	.065	.3509
	18	.049	.1295	2	16	.065	.4733
⅞	18	.049	.1520	2½	11	.120	1.0812
1	20	.035	.1275	3	11	.120	1.3056
	18	.049	.1754				

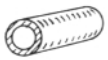
ALUMINUM ROUND TUBE
6061-T6

WW T 700/6 WW T 789 AMS 4082

12 FT. LENGTHS

O.D.	Stubs Gauge No.	Wall Thickness	Weight per Ft. in Lbs.	O.D.	Stubs Gauge No.	Wall Thickness	Weight per Ft. in Lbs.
3/16	20	.036	.020	1⅛	20	.035	.141
	18	.049	.025	1¼	20	.035	.157
¼	20	.035	.028		18	.049	.217
5/16	20	.035	.036		16	.065	.284
	18	.049	.048		14	.083	.357
⅜	20	.035	.044	1⅜	20	.035	.173
	18	.049	.059	1½	20	.035	.189
	16	.065	.074		18	.049	.263
7/16	20	.035	.052		16	.065	.344
	18	.049	.070		14	.083	.434
	16	.065	.089		* ⅛	.125	.640
½	22	.028	.049		* ¼	.250	1.155
	20	.035	.060	1⅝	20	.035	.206
	18	.049	.082	1¾	14	.083	.510
	16	.065	.104	1⅞	17	.058	.389
⅝	22	.028	.062	2	18	.049	.353
	20	.035	.076		16	.065	.464
	18	.049	.104		14	.083	.590
	16	.065	.134		* ⅛	.125	.866
¾	20	.035	.092		* ¼	.250	1.620
	18	.049	.127	2¼	18	.049	.398
	16	.065	.164		16	.065	.520
	14	.083	.204		14	.083	.660
⅞	20	.035	.109	2½	16	.065	.589
	18	.049	.149		14	.083	.740
	16	.065	.194		* ⅛	.125	1.097
1	20	.035	.125		* ¼	.250	1.097
	18	.049	.172	3	16	.065	.700
	16	.065	.224		* ⅛	.125	1.328
	14	.083	.281		* ¼	.250	2.540
	⅛	.125	.404	4	16	.065	.940

*Extruded Tube.



ALUMINUM PIPE
6063-T6

Schedule 40

20 FT. LENGTHS

Nominal Size	O.D. Inches	I.D. Inches	Wall Thickness Inches	Weight per Ft. in Lbs.
⅛*	.405	.269	.068	.084
¼*	.540	.364	.088	.147
⅜*	.675	.493	.091	.196
½	.840	.622	.109	.294
¾	1.050	.824	.113	.390
1 **	1.315	1.049	.133	.580
1¼**	1.660	1.380	.140	.785
1½**	1.900	1.610	.145	.939
2 **	2.375	2.067	.154	1.262
2½	2.875	2.469	.203	2.002
3 **	3.500	3.068	.216	2.617
3½**	4.000	3.548	.226	3.147
4 **	4.500	4.026	.237	3.729
5 **	5.563	5.047	.258	5.051
6 **	6.625	6.065	.280	6.556
8 **	8.625	7.981	.322	9.867
10	10.750	10.020	.365	14.000
12 *†	12.750	12.000	.375	17.140

** Available in Schedule 80 Wall Thickness.
* 12 Ft. Lengths. †Not A.S.A. Schedule 40

ALUMINUM PIPE
6061-T6

Schedule 40

20 FT. LENGTHS

Nominal Size	O.D. Inches	I.D. Inches	Wall Thickness Inches	Weight per Ft. in Lbs.
½*	.840	6.22	.109	.294
¾*	1.050	8.24	.113	.390
1	1.315	1.049	.133	.580
1¼ †	1.660	1.380	.140	.785
1½ †	1.900	1.610	.145	.939
2	2.375	2.067	.154	1.262
2½	2.875	2.469	.203	2.002
3	3.500	3.068	.216	2.617
4	4.500	4.026	.237	3.729
5	5.563	5.047	.258	5.051
6	6.625	6.065	.280	6.556

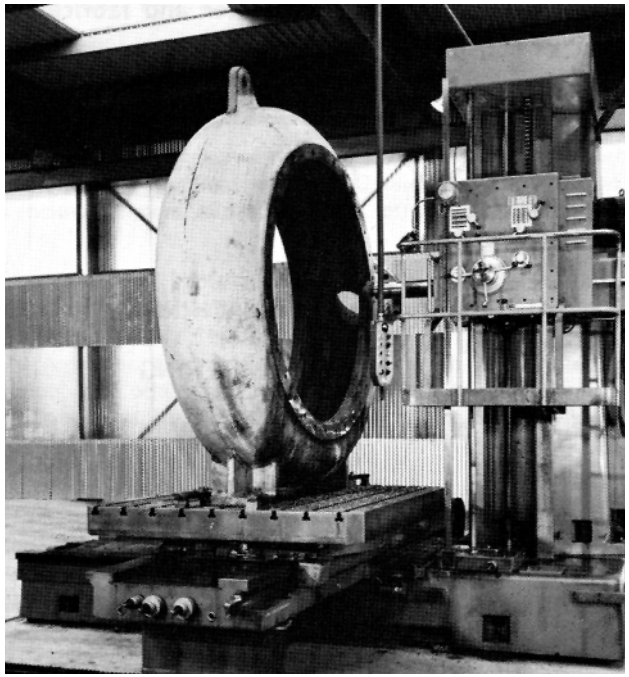
*Welded Pipe †See Below for Handrail Pipe.

ALUMINUM PIPE
6063-T6

Schedule 40

20 FT. LENGTHS PLAIN ENDS

Nominal Size	O.D. Inches	I.D. Inches	Wall Thickness Inches	Weight per Ft. in Lbs.
1¼	1.660	1.380	.140	.785
1½	1.900	1.610	.145	.939



SPECIAL SERVICES

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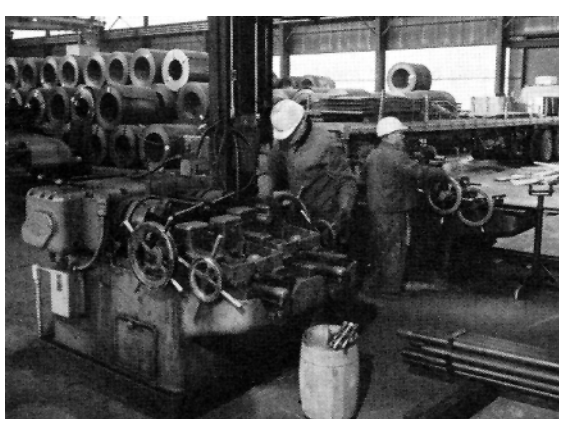
–your “full range” distributor and fabricator of construction products

BEAM SPLITTING – to make “Tees”	MACHINING
CUTTING	MITERING
DRILLING	PAINTING
FLAME CUTTING	PUNCHING
FORMING	ROLLING
FRICTIONSAWING	SHEARING
GALVANIZING	SHOT BLASTING
HACK SAWING	THREADING
	WELDING



Making special threaded rods up to 2½” in diameter.

CONSTRUCTION SERVICES

Our products and services to the construciton industry include:

- **Fabricating & Welding –** Our structural fabricating and welding department handles multi-thousand ton projects from the Midwest to the West Coast, including Alaska. Industrial projects include power plants, bridges, cement plants, chemical and fertilizer plants and coal handling facilities. Commercial construction projects include schools, banks hospitals, offices and parking garages.

  We are cetified to AISC Level III Structural Fabrication. This is the highest non-nuclear certification available to a steel fabricator. A high level of Quality Control is assured by adherence to standards of the American Welding Society, American Institute of Steel Construction, and other applicable Society and Association specifications as well as our own Quality Control Program.

- **Shot Blasting and Painting –** Shotblasting is available for coating systems requiring cleaning to SSPC-SP6 or cleaner. Our painting system is designed to apply either standard shop coat primers or multi-coat paint according to your specifications; hot dipped galvanizing is also available.

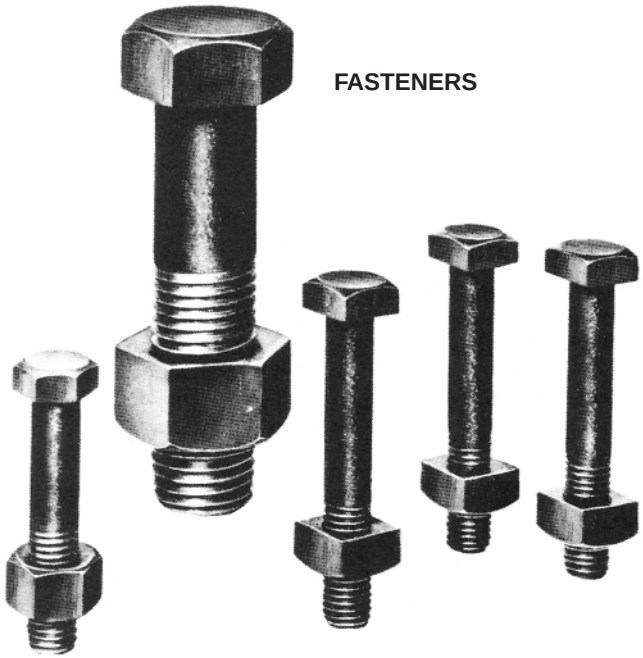
- **Reingorcing Products –** Our reinforcing bar stock includes No. 2 through No. 11 bars and meets ASTM Specification A615 Grade 40 and Grade 50. We can also furnish Bar Spacers, Bar Chairs, Bar Ties, Inserts and other accessories. Metal Road Strip, Pins, Bar Supports and Expansion Joints, can be supplied. We also supply reinforcing mesh in spacing sizes of 6 x 6 and 4 x 4 with wire gauges of 4, 6, 8, and 10.

- **Fasteners –** We offer a complete stock of bolts, washers and nuts for the structural and contracting trade. Fasterners are availagble in ASTM-A-307, standard grade, as well as ASTM-A-325 and ASTM-A-490, structural grades. Fasteners are available in plain finish, zinc or cadmium plated, or hot dipped galvanized.

- **Threading –** We are equipped to thread bars 3/16” to 2½” diameter, National Course and National Fine Thread, right hand or left hand, specific length or continuous thread. Thrreaded rods can be bent to shape.

- **Joists and Decking –** Joists, roof deck, floor deck and related accessories for commercial and industrial building are available. All materials can be detailed and furnished to architectural plans and specifications.

FASTENERS
BOLTS - NUTS - WASHERS



FASTENERS

Fasteners listed in this catalogue are available either from stock or special order. The standard bolt and nut pattern is the hex head. The standard thread is course thread. Fasteners are available in both plain finish and galvanized. Bolts and nuts are available in the following grades:

Standard – manufactured from low or medium carbon steel; size range: ¼" through 4"; specification: ASTM-A-307

Structural – ASTM-A-325, Type 1; manufactured from medium carbon steel, quenched and tempered; size range: ½" through 1¼"; also available in ASTM-A-325, Type 3, Weather Resistant.

– ASTM-A-490, Type 1; manufactured from medium carbon alloy steel, quenched and tempered; size range: ½" through 1¼"; also available in ASTM-A-490, Type 3, Weather Resistant.

BOLTS

Anchor Bolts – also called concrete anchors or expansion bolts. Designed to have one end set in concrete with the threaded end used to fasten a structural weldment or equipment to the anchor bolts; the standard finish is zinc plate – also available in stainless steel; specification: ASTM-A-307.
Hex Bolts – the standard bolt in size and configuration; specifications: ASTM-A-307, ASTM-A-325, ASTM-A-470.
Heavy Hex Bolt – designed for use where greater bearing surface and structural strength are required; used as a general purpose bolt for assembly of structural sections; typically used with hardened washers; specifications; ASTM-A-307, ASTM-A-325, ASTM-A-470.
Tension Bolt – designed to replace rivets especially in structural weldments which are subject to stress and vibration; comparable mechanical properties to ASTM-A-325/A-490 High Strength Bolts; standard sizes are ½", ⅝", ¾", ⅞" and 1".

WASHERS

Wrought Washer – also called malleable washer; manufactured from low carbon steel; general application grade; no industry specification.
Beveled – beveled on one side to allow it to fit into the contour of standard beams and channels; available in types A and B, unhardened or hardened to ASTM-A-325/A-490.
Lock Washer – also called SAE Standard or helical spring lock washer; manufactured from low carbon steel; no industry specification.
Load Indicator Washer – a hardened round washer with protrusions pressed out on the flat surface which when properly compresed will product the proper bolt tension; specifications: ASTM-A-325 and ASTM-A-490.

NUTS

Hex Nut – the standard nut in size and configuration; designed for use with non-heat-treated bolts; sizes range ¼" through 4"; specification : ASTM-A-563, Grade A or ASTM-A-194.
Heavy Hex Nut – designed for applications where greater bearing surface is required; designed for use with both standard and high strength bolts; sizes range: ¼" through 2"; specification: ASTM-A-563, Grade A or ASTM-A-194.
Jamb Nut – Approximately one-half the thickness of the standard nut; designed to be used in pairs with either another jamb nut or most other types of nuts in order to provide a locking action of anchor bolts, turnbuckles or sag rods.

BOLTS

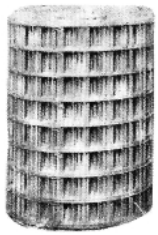
Bolt Size	Standard Length (in inches)
½"	1¼, 1½, 1¾, 2, 2¼, 2½, 2¾, 3
⅝"	1¼, 1½, 1¾, 2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾, 4, 4¼, 5, 5½, 6, 6½, 7, 7½, 8
¾"	1½, 1¾, 2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 5, 5½, 6, 6½, 7, 7½, 8
⅞"	1½, 1¾, 2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 4¾, 5, 5½, 6, 6½, 7, 7½, 8
1"	2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 4¾, 5, 5½, 6, 6½, 7, 7½, 8
1⅛"	2½, 2¾, 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 4¾, 5, 5½,6, 6½, 7, 7½, 8
1¼"	2¾, 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 4¾, 5, 5½, 6, 6½, 7, 7½, 8

Sizes shown are industry standard sizes for Structural grade bolts; many additional sizes are available in Standard grade, please inquire. Structural grade bolts are supplied with Structural grade nuts; Standard grade bolts are not supplied with nuts.

WASHERS

Bolt Size	Washer Size - O.D. Standard	Washer Size - O.D. Structual	Weight per 100 pcs. Standard	Weight per 100 pcs. Structual
½"	1⅜"	1 1/16"	3.9	1.9
⅝"	1¾"	1 5/16"	7.7	3.7
¾"	2"	1 15/32"	11.0	4.3
⅞"	2¼"	1¾"	15.3	6.8
1"	2½"	2"	18.8	9.0
1⅛"	2¾"	2¼"	22.0	11.1
1¼"	3"	2½"	26.0	13.7

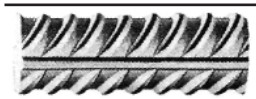
Standard Grade washers available for larger bolt sizes, please inquire.



REINFORCING MESH

Electric Welded Fabric

Spacing	Gauge Wire	Wt. per 100 Sq. Feet	Width in Feet	Length of Rolls in Feet
6 x 6	10	21	5	150
6 x 6	8	30	5	150
6 x 6	6	42	5	150
6 x 6	4	58	5	150
4 x 4	10	31	5	150
4 x 4	4	85	5	150

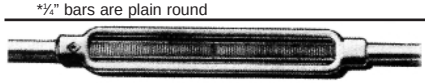


REINFORCING MESH

New Billet - Deformed Bars
ASTM A615 KGrade 40

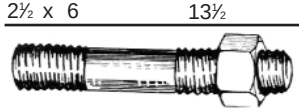
Bar No.	Effective Diamete in Inches	Gauge Wire	Wt. per 100 Sq. Feet	Width in Feet	Length of Rolls in Feet
2	*¼	. . .	0.05	0.786	0.167
3	⅜	. . .	0.11	1.178	0.376
4	½	. . .	0.20	1.571	0.668
5	⅝	. . .	0.31	1.963	1.043
6	¾	. . .	0.44	2.356	1.502
7	⅞	. . .	0.60	2.749	2.044
8	1	. . .	0.79	3.142	2.670
9	1.13	1	1.00	3.544	3.400
10	1.27	1⅛	1.27	3.990	4.303
11	1.41	1¼	1.56	4.430	5.313

*¼" bars are plain round



TURNBUCKLES

Diameter & Takeup Inches	Overall Length Inches Without Stubs	Overall Length Inches With Stubs Ext'd.	Approx. Wt. Lbs. Without Stubs	Approx. Wt. Lbs. With Stubs
⅜ x 6	7⅛	22½	.34	.67
½ x 6	7½	22½	.55	1.10
⅝ x 6	7½	22½	.80	1.86
¾ x 6	8¼	23½	1.29	2.75
⅞ x 6	8⅝	24½	1.30	3.78
1 x 6	9	25	1.60	4.96
1⅛ x 6	9⅜	25½	2.72	7.60
1¼ x 6	9¾	26¼	2.90	8.50
1⅜ x 6	10⅛	26¾	4.13	12.23
1½ x 6	10½	27½	5.25	15.00
1⅝ x 6	10⅞	28¼	5.88	17.88
1¾ x 6	11¼	28½	7.05	21.00
2 x 6	12	29½	9.95	28.95
2¼ x 6	12¾	30½	18.00	43.00
2½ x 6	13½	32½	23.25	56.75



THREADED ROD

Stock Lengths - 3 ft. and 12 ft.
Plain or Zinc Plated

Diameter in Inches	Number of Threads per Inch*	Approx. Wt. per 100 Ft. in Lbs.	Diameter in Inches	Number of Threads per Inch*	Approx. Wt. per 100 Ft. in Lbs.
¼	20	12	¾	10	125
5/16	18	20	⅞	9	165
⅜	16	29	1	8	225
7/16	14	40	1⅛	7	280
½	13	54	1¼	7	355
⅝	11	83	1½	6	510

*Also available National Fine Thread

LIGHT FABRICATION

Light Fabrication is a first step processing service which we offer to manufacturers and contractors. Using our equipment and know-how, we can shear, flame cut, form, roll, punch, bend and weld various steel items to a variety of shapes and sizes.

- **Cutting –** This process includes burning and shearing. As a guide to ordering, use the numerical and alphabetical guide shown on page 193. For more intricate configurations and special orders, include a detailed print. On rings and circles, where stock allowance is required to finish to a machined dimension, mark this on the print.

- **Rolling –** For ordering rolled structurals and bars, pipe and tubing, as well as rolled sheet and plate sections, use the terminology as shown on the charts on page 194.

- **Forming –** For this type of fabrication, specify which of the dimensions are to bo O.D. or I.D. Also note whether the finished part is to fit into another part – this is important because Press Braked material will tend to "stretch" during fabrication. See page 195.

- **Punching and Drilling –** For material which is to be punched or drilled, specify the hole size, hole spacing and the dimension or side from which the center or the hole is to be measured.

- **Sawing and Milling –** This process includes hacksaw or bandsaw sawing and milling of previously cut ends to a smooth finish with a square cut end for tight fit-up. For critical fit-up, supply a finished print detailing fit-up and assembly of all component pieces.

As a further assist to you, note our list of steel fabricating and processing equipment on page 192. The capacities shown on this equipment are the maximum fabricating capacities and may vary depending upon grain direction of material being fabricated, strength levels of material and prior or subsequent processing to be done on the fabricated section.

LIGHT FABRICATION PROCESSING EQUIPMENT

ROLLS

BERTSCH PLATE ROLL

Length 10'0"
Capacity at 24" Dia.

3/8"	x	120"	3/4"	x	17"
7/16"	x	70"	7/8"	x	12"
1/2"	x	46"	1"	x	9"
5/8"	x	27"			

RONDO ANGLE ROLL

5"x5"x5/8" Max.; Min. Dia.
65" Leg out; 90" Leg in.
1½"x1½"x¼ Min.; Min. Dia. 18"
5" pine; Min. Dia. 36"
4" Rolls (36" Dia.)

BUFFALO ANGLE ROLL (#1)

3"x3"x3/8" Max.; Min. Dia.
24" Leg out; 36" Leg in
1½"x1½"x3 16" Min.; Min. Dia.
13" Leg out; 14" Leg in.
1"-2½" pipe; Min. Dia.
14" on smallest size pipe.

BUFFALO ANGLE ROLL (#½)

2"x2"x¼" Max.; Min. Dia.
20" Leg out; 24" Leg in.
¾"x¾"x⅛" Min.; Min. Dia.
9" Leg out; 9" Leg in.

DRILLS

Carlton 8-0 Arm; Mounted on Track 100'-0" long.
Carlton 6-0 Arm. Carlton 3-0 Arm.
Carlton 4-0 Arm.

DRILL LINE

Channel and Wide Flange
Max Size: All Domestic Sections
Max Length: 62'0"
Max Drill Size: 1-5/16"
Saw Tol±1/32"
Saw Kerf: 3/8"

PRESS BRAKES

600 TON BRAKE

16'0" Bed length.
6'6" Between housings.
1'0" Throat depth.
Capacity ¾" x 5'
5/8" X 8'
½" X 12'

400 TON PUNCHING PRESS

10'0" Bed length.
6'6" Between housings.
10" Throat depth.
Capacity 5/8" x 4'
½" x 8'
Equpped with Uni-punches
Max. 1⅛" Dia. through ¾" thick material

225 TON BRAKE

14'0" Bed length.
12'6" Between housings.
8" Throat depth
Capacity 3/8" x 6'
5/16" X 9'
¼" X 13'

TEMPLATE AND COMPUTERIZED FLAME CUTTING

Numerous multiple torch machines, including straight line and intricate shapes.

PLASMA ARC

Precision Non-Ferrous Cutting.
Little or no surface oxide, dross or distortion, close tolerance.
Water table bed size 10 ft. x 40ft.

FURNACES

HEAT TREATING FURNACE (1500° Max.)

5'0" WIDE: 10'0" Long;
2'2" High at wall; 2'6" High at crown.

FORGING FURNACE (2200° Max.)

4'6" WIDE; 6'0" Long; 10" High

SAWS

BAND SAWS

Multiple band saw capacity, up to 18" x 20" opening, 40 ft. table length, and 45° mitre cut.

HACK SAWS

Multiple hack saw capacity, up to 14" x 14" opening, 20 ft. table length, and manual or automatic cutting.

SHEARS

CINCINNATI CUT TO LENGTH LINE

72"x¼" Max. capacity
Equipped with Voss Leveler to flatten to 28 Gauge.
1" SHEAR x 6'0" Max. width.
5/8" SHEAR x 12'0" Max. width.
¼" SHEAR x 14'0" Max. width

NIBBLER SHEAR

¼" Max. thickness. 4'0" throat depth.

PEDDINGHAUS ANGLEMASTER

Punches and cuts angles to 6"x6"x½"
Min. angle 1½"x1½" Min. Gauge ¾"
Max. hole 1⅜" thru 5/16" material
Max. hole 1-5/16" thru ⅜" material.
Max. Hole 15/16" thru ½" material.
Short Slots 13/16" x 1"; 15/16"x1⅛".

THREADING MACHINES

Multiple threading capacity from 3/8" min.to 2½" max. round.

MISCELLANEOUS EQUIPMENT

GAUER EDGE ROLLER

20 Ga. thru 3/16" thickness.
½" thru 10" width.

750-TON PRESS (Southwick)

Stroke distance 11" Min.; 40" Max.
Max. piece size cannot exceed 6'0".

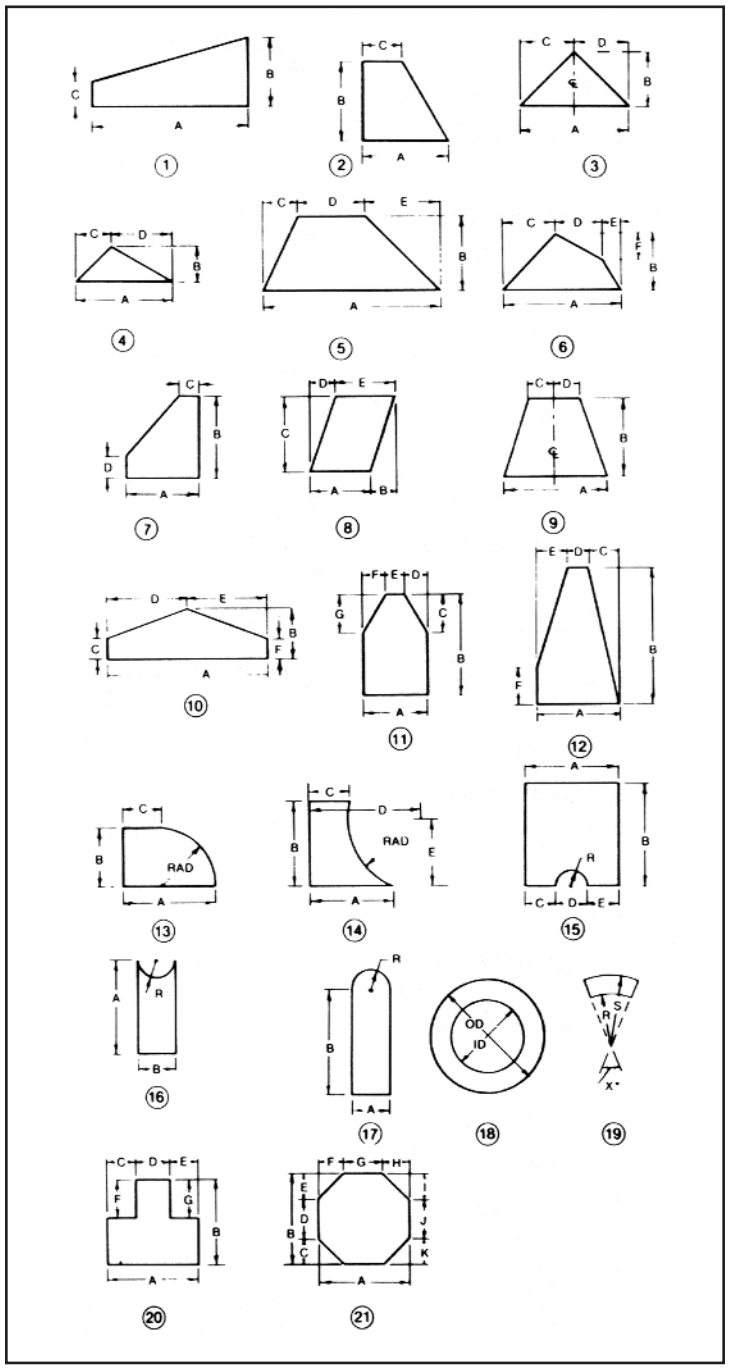
8-WHEEL SHOTBLASTER

Cabinet opening 5'0" x 11'0".

WELDING PROCESSES

Submerged arc.
Gas metal arc.
Shielded metal arc.
Flux cored arc.
Stud welding.

DETAIL GUIDE TO BURNED AND SHEARED SHAPES



DETAIL GUIDE TO ROLLED STRUCTURAL SHAPES

ANGLES

LEG OUT
Specify inside diameter
and, if uneqqual, which leg is out.

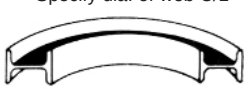
LEG IN
Specify outside diameter
and, if unequal, which leg is in.

HEEL OUT
Specify inside diameter

HEEL IN
Specify outside diameter.

BEAMS

EZ WAY
Specify dia. of web C/L



HARD WAY
Specify I.D. or O.D.

ZEES

EZ WAY
Specify dia. of web C/L

HARD WAY
Specify I.D. or O.D

CHANNELS

EZ WAY,
FLANGES OUT
Specify inside diameter

EZ WAY,
FLANGES IN
Specify outside diameter

HARD WAY
OF WEB
Specify I.D. or O.D.

TEES

STEM OUT
Specify inside diameter

STEM IN
Specify outside diameter

STEM UP
Specify dia. of stem C/L

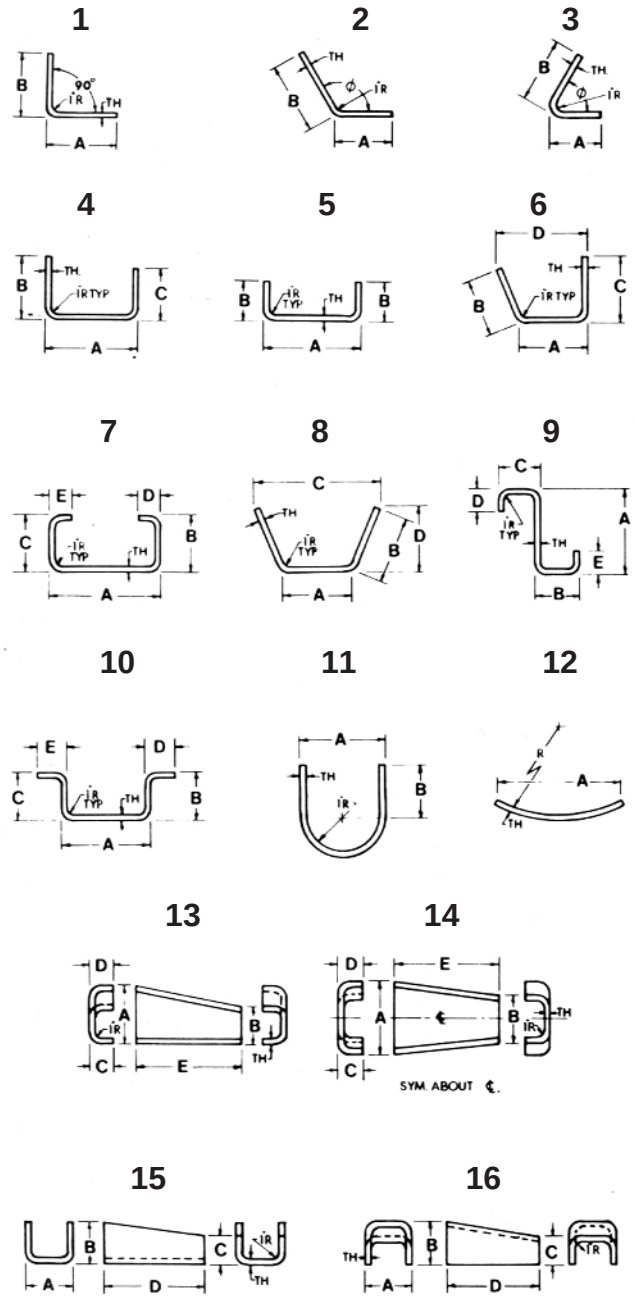
BARS

EZ WAY
Specify I.D. or O.D

HARD WAY
Specify I.D. or O.D

Ordering information:
1. Rolled joint – left open or butt welded?
2. If rolled joint left open, should the ends be trimmed or left untrimmed?– Approximately 12: on each end of a rolled section will have a flat spot.
3. If rolled joint is butt welded, should the weld be left “as is” or ground smooth?

DETAIL GUIDE TO FORMED SHEET AND PLATE



MACHINING SERVICES

Our machine shop is equipped with the latest and most sohisticated equipment in the area – available to our customers on call– day or night, twenty-four hours a day, seven days a week. This list of machine shop equipment shows the equipment's greatest capabilities; these capabilities may vary depending upon the configuration of the piece to be machined and prior or subsequent operations. We have the capacity to stress relieve weld fixtures prior to machining – this operation will insure accuracy and precision control in the machining proces. The following page shows our machine services at work.

LIST OF MACHINE SHOP EQUIPMENT

OKUMA ENGINE LATHE
Spindle 1¾".
Can provide up to 10% taper.
Largest O.D. 12" (to clear cross-feed).
Used for all turning and for threading; tooling for metric threading.

GISHOLT TURRET LATHE
6 Position turret for drills, boring bars, etc.
Distance from jaws 9⅝" min.– 55" max.
4 Position tool post.
Total move on cross-feed 12" . (This is 1½" past center).
Distance from chuck 4¼" min.– 50⅛" max.
Spindle 4" max.
Largest O.D. 20"

GISHOLT TURRET LATHE– MASTER LINE 3K
6 Position turret for drills, boring bars, etc.
Turret can be moved off center.
Distance from jaws 11" min.– 62" max.
4 Position tool post.
Total move on cross-feed of tool post 14".
Distance from chuck 6" min.– 57" max.
Spindle 6.625" max. (6" hole through spindle).
Largest O.D. 26.125"

LODGE & SHIPLEY ENGINE LATHE
18" LATHE.
20" Max. O.D. swing (to clear cross-feed table).
12" Max cross-feed over center.
Used for turning and threading.
Taper up to 10%.

KEARNEY & TRECKER KNEE-TYPE HORIZONTAL MILL
Vertical travel 18" max.(Up/Down).
Table travel 42" max. (Rt./Lf).
In-Out travel 15" max.

KEARNEY & TRECKER KNEE TYPE MILL 50 HP
Vertical travel 18" max.(Up/Down).
Table travel 60" max. (Rt./Lf).
In-Out travel 16" max.

KEYSEATER - DAVIS MODEL 5
1/16 Thru 1½ keyways.
18" throat depth.

WOTAN 5"HORIZONTAL BORING BAR
Table 6' x 6'6"
Spindle 5" x 3'0" long.
Travel Horizontal 10'0" (Rt/Lf).
Travel Horizontal 4'6" (In/Out).
Travel Vertical 6'8" (Up/Down).
Table can be turned to any degree and locked.
Maximum work piece capacity – 20,000#.

LUCAS 4" HORIZONTAL BORING BAR
Horizontal Travel 7'0" (Rt/Lf).
Horizontal Travel 4'0" (In/Out).
Vertical Travel 4'2" (Up/Down).
4" Spindle 30" long.

KING VERTICAL BORING MILL
100" Diameter.
78" Height.

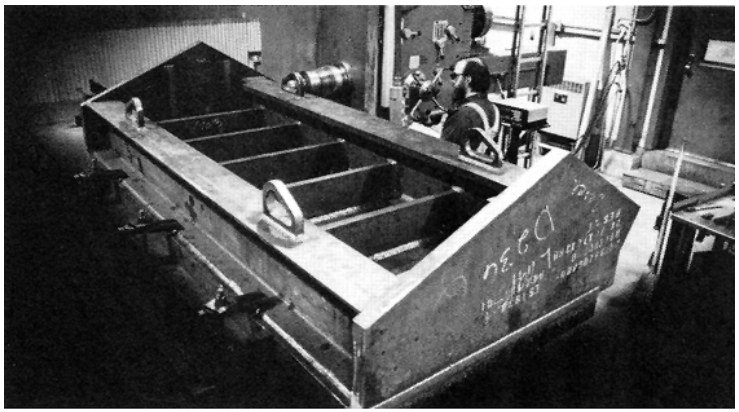
CINCINNATI VERTICAL MILL
Table length 32".
Width 18" with throat.
14" from cutter to table (max.).
9" from cutter to vise (max.).
Up to 2" mill.
Can also fly cut.

FLYING SCOT OPEN SIDE PLANER
40" Max height.
42" table width – 60" max. width cut.
16'0" table travel length.

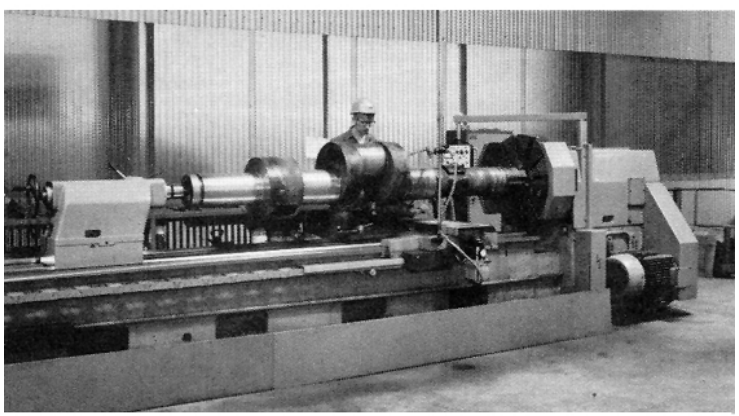
GRAY PLANER
42" Max height.
42" width.
24'0" table travel length.

LEPONT LATHE
4⅜" Spindle.
15" Gap (47" dia. will swing in gap).
24" Dia. max. over saddle.
36" Dia. max. over ways.
23'7½" max. length.
18½" Dia. through steady rest.
4⅜" Dia. through spindle.

MACHINING SERVICES

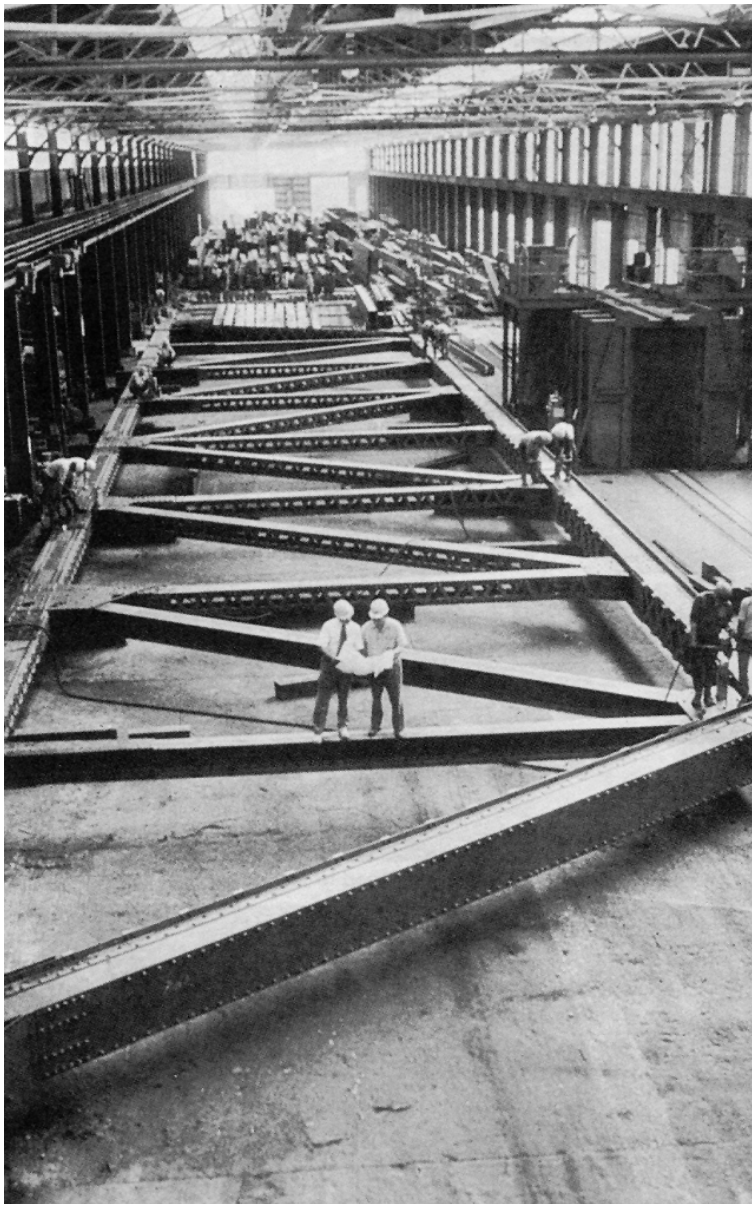


This weldment was manufactured complete in our shop– stress relieved, and then machined to final dimensions.

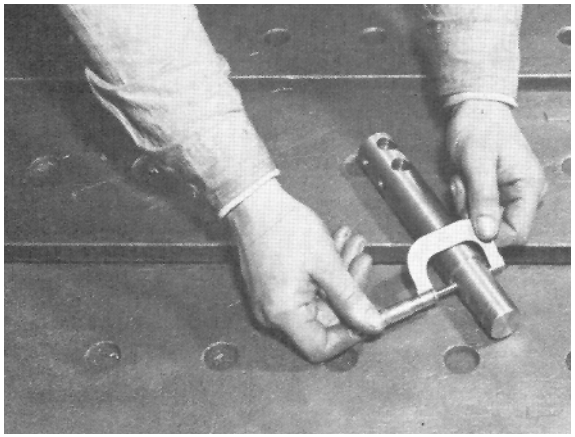


Large shaft for a power plant to precise, critical dimensions.

High carbon railroad wear plates oil quenched after forming and heat treating.



250-foot fabricated bridge truss



WEIGHTS AND DATA

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FRACTIONS AND DECIMALS OF AN INCH WITH MILLIMETER EQUIVALENTS

Fraction	Decimal	Millimeters	Fraction	Decimal	Millimeters
1/64	.015625	.039688	33/64	.515625	13.09690
1/32	.03125	.079375	17/32	.53125	13.49378
3/64	.046875	1.19063	35/64	.546875	13.89065
1/16	.0625	1.58750	9/16	.5625	14.28753
5/64	.078125	1.98438	37/64	.578125	14.68440
3/32	.09375	2.38125	19/32	.59375	15.08128
7/64	.109375	2.77813	39/64	.609375	15.47816
1/8	.125	3.17501	5/8	.625	15.87503
9/64	.140625	3.57188	41/64	.640625	16.27191
5/32	.15625	3.96876	21/32	.65625	16.66878
11/64	.171875	4.36563	43/64	.671875	17.06566
3/16	.1875	4.76251	11/16	.6875	17.46253
13/64	.203125	5.15939	45/64	.703125	17.85941
7/32	.21875	5.55626	23/32	.71875	18.25629
15/64	.234375	5.95314	47/64	.734375	18.65316
1/4	.25	6.35001	3/4	.75	19.05004
17/64	.265625	6.74689	49/64	.765625	19.44691
9/32	.28125	7.14376	25/32	.78125	19.84379
19/64	.296875	7.54064	51/64	.796875	20.24067
5/16	.3125	7.93572	13/16	.8125	20.63754
21/64	.328125	8.33439	53/64	.828125	21.03442
11/32	.34375	8.73127	27/32	.84375	21.43129
23/64	.359375	9.12814	55/64	.859375	21.82817
3/8	.375	9.52502	7/8	.875	22.22504
25/64	.390625	9.92189	57/64	.890625	22.62195
13/32	.40625	10.31877	29/32	.90625	23.01880
27/64	4.21875	10.71565	59/64	.921875	23.41567
7/16	.4375	11.11252	15/16	.9375	23.81255
29/64	.453125	11.50940	61/64	.953125	24.20942
15/32	.46875	11.90627	31/32	.96875	24.60630
31/64	.484375	12.30315	63/64	.984375	25.00318
1/2	.5	12.70003	1	1.	25.40005

WEIGHT OF ROUND STEEL BARS

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
1/16	.010	.125	.16	.200
5/64	.016	.192	.256	.320
3/32	.024	.288	.384	.480
7/64	.032	.384	.512	.640
1/8	.042	.501	.667	.834
9/64	.053	.634	.845	1.06
5/32	.065	.782	1.04	1.30
11/64	.079	.947	1.26	1.58
3/16	.094	1.127	1.50	1.88
13/64	.110	1.32	1.76	2.20
7/32	.128	1.53	2.04	2.56
15/64	.147	1.76	2.35	2.93
1/4	.167	2.00	2.67	3.34
17/64	.188	2.26	3.01	3.77
9/32	.211	2.53	3.38	4.22
19/64	.235	2.82	3.77	4.71
5/16	.261	3.13	4.17	5.22
21/64	.288	3.45	4.60	5.75
11/32	.316	3.79	5.05	6.31
23/64	.345	4.14	5.52	6.90
3/8	.376	4.51	6.01	7.51
25/64	.408	4.89	6.52	8.15
13/32	.441	5.28	7.05	8.81
27/64	.475	5.70	7.60	9.51
7/16	.511	6.13	8.18	10.22
29/64	.548	6.58	8.77	10.97
15/32	.587	7.04	9.39	11.73
31/64	.627	7.52	10.02	12.53
1/2	.668	8.01	10.68	13.35
33/64	.710	8.52	11.36	14.20
17/32	.754	9.04	12.06	15.07
9/16	.845	10.14	13.52	16.90
37/64	.893	10.71	14.28	17.85
19/32	.941	11.30	15.06	18.83
39/64	.992	11.90	15.87	19.83
5/8	1.043	12.52	16.69	20.86
41/64	1.096	13.50	17.53	21.92
21/32	1.150	13.80	18.40	23.00
11/16	1.262	15.15	20.20	25.24
23/32	1.380	16.55	22.07	27.59
47/64	1.440	17.28	23.04	28.80
3/4	1.502	18.03	24.03	30.04
49/64	1.565	18.78	25.04	31.31
25/32	1.630	19.56	26.08	32.60
13/16	1.763	21.15	28.21	35.26
27/32	1.901	22.81	30.42	38.02
7/8	2.045	24.53	32.71	40.89
29/32	2.193	26.32	35.09	43.86
15/16	2.347	28.16	37.55	46.94
31/32	2.506	30.07	40.10	50.12
1	2.670	32.04	42.73	53.41
1 1/32	2.840	34.08	45.44	56.80
1 1/16	3.015	36.18	48.23	60.29
1 1/8	3.380	40.56	54.08	67.59
1 3/16	3.767	45.19	60.25	75.31
1 1/4	4.172	50.07	66.76	83.45
1 5/16	4.600	55.20	73.60	92.00
1 3/8	5.049	60.58	80.78	100.97
1 7/16	5.520	66.22	88.29	110.36
1 1/2	6.008	72.10	96.13	120.17
1 9/16	6.52	78.23	104.31	130.39

(continued on following page)

WEIGHT OF ROUND STEEL BARS

(continued from preceding page)

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
1 3/8	7.05	84.62	112.82	141.03
1 11/16	7.60	91.25	121.67	152.09
1 3/4	8.18	98.14	130.85	163.56
1 13/16	8.77	105.27	140.36	175.45
1 7/8	9.39	112.66	150.21	187.76
1 15/16	10.02	120.29	160.39	200.48
2	10.68	128.18	170.90	213.63
2 1/16	11.36	136.31	181.75	227.19
2 1/8	12.06	144.70	192.93	241.17
2 3/16	12.78	153.34	204.45	255.56
2 1/4	13.52	162.22	216.30	270.37
2 5/16	14.28	171.36	228.48	285.60
2 3/8	15.06	180.75	241.00	301.25
2 7/16	15.87	190.39	253.85	317.31
2 1/2	16.69	200.28	267.04	333.80
2 9/16	17.53	210.42	280.55	350.69
2 5/8	18.40	220.80	294.41	368.01
2 11/16	19.29	231.44	308.59	385.74
2 3/4	20.19	242.34	323.11	403.89
2 13/16	21.12	253.48	337.97	422.46
2 7/8	22.07	264.86	353.15	441.44
2 15/16	23.04	276.50	368.67	460.84
3	24.03	288.40	384.53	480.66
3 1/16	25.05	300.54	400.72	500.90
3 1/8	26.08	312.94	417.25	521.56
3 3/16	27.13	325.57	434.10	542.62
3 1/4	28.21	338.47	451.30	564.12
3 5/16	29.30	351.61	468.82	586.02
3 3/8	30.42	365.00	486.67	608.34
3 7/16	31.55	378.65	504.86	631.08
3 1/2	32.71	392.54	523.39	654.24
3 9/16	33.89	406.69	542.26	677.82
3 5/8	35.09	421.08	561.44	701.80
3 11/16	36.31	435.73	580.98	726.22
3 3/4	37.55	450.62	600.83	751.04
3 13/16	38.81	465.77	621.02	776.28
3 7/8	40.10	481.16	641.55	801.94
3 15/16	41.40	496.81	662.42	828.02
4	42.73	512.71	683.62	854.52
4 1/16	44.07	528.85	705.14	881.42
4 1/8	45.44	545.26	727.01	908.76
4 3/16	46.83	561.90	749.20	936.50
4 1/4	48.23	578.80	771.73	964.66
4 5/16	49.66	595.94	794.59	993.24
4 3/8	51.11	613.34	817.79	1022.24
4 7/16	52.58	631.00	841.33	1051.66
4 1/2	54.08	648.90	865.20	1081.50
4 9/16	55.59	667.04	889.39	1111.74
4 5/8	57.12	685.45	913.94	1142.42
4 11/16	58.68	704.10	938.80	1173.50
4 3/4	60.25	723.00	964.00	1205.00
4 7/8	63.46	761.56	1015.41	1269.26
4 15/16	65.10	781.20	1041.60	1302.00
5	66.76	801.11	1068.14	1335.18
5 1/8	70.14	841.67	1122.22	1402.78
5 1/4	73.60	883.22	1177.63	1472.04
5 5/16	75.36	904.37	1205.82	1507.28
5 7/16	78.95	947.44	1263.25	1579.06
5 1/2	80.78	969.67	1292.45	1615.56
5 5/8	84.49	1013.88	1351.84	1689.80
5 3/4	88.29	1059.48	1412.64	1765.80

(continued on following page)

WEIGHT OF ROUND STEEL BARS

(continued from preceding page)

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
5 7/8	92.17	1106.04	1474.72	1843.4
5 15/16	94.14	1129.68	1506.24	1882.8
6	96.13	1153.56	1538.08	1922.6
6 1/4	104.31	1251.72	1668.96	2086.2
6 1/2	112.82	1353.84	1805.12	2256.4
6 3/4	121.67	1460.04	1946.72	2433.40
7	130.85	1570.20	2093.60	2617.0
7 1/4	140.36	1684.32	2245.76	2807.20
7 1/2	150.21	1802.52	2403.36	3004.20
7 3/4	160.39	1924.68	2566.24	3207.80
8	170.90	2050.80	2734.40	3418.0
8 1/4	181.75	2181.00	2908.00	3635.00
8 1/2	192.93	2315.16	3086.88	3858.60
8 3/4	204.45	2453.40	3271.20	4089.00
9	216.30	2595.60	3460.80	4326.0
9 1/4	228.48	2741.76	3655.68	4569.60
9 1/2	241.00	2892.00	3856.00	4820.00
9 3/4	253.85	3046.20	4061.60	5077.00
10	267.00	3204.00	4272.00	5340.0
12	384.53	4614.36	6152.48	7690.60

WEIGHT OF SQUARE STEEL BARS

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
1/8	.053	.64	.85	1.06
5/32	.083	1.00	1.33	1.66
3/16	.120	1.44	1.92	2.40
7/32	.163	1.96	2.61	3.26
1/4	.213	2.56	3.41	4.26
9/32	.269	3.23	4.30	5.38
5/16	.332	3.98	5.31	6.64
11/32	.402	4.82	6.43	8.04
3/8	.478	5.74	7.65	9.56
7/16	.651	7.81	10.42	13.02
1/2	.850	10.20	13.60	17.00
9/16	1.08	12.96	17.28	21.60
19/32	1.20	14.40	19.20	24.00
5/8	1.33	15.96	21.28	26.60
11/16	1.61	19.32	25.76	32.20
3/4	1.91	22.92	30.56	38.20
13/16	2.24	26.88	35.84	44.80
7/8	2.60	31.20	41.60	52.00
15/16	2.99	35.88	47.84	59.80
1	3.40	40.80	54.40	68.00
1 1/16	3.84	46.08	61.44	76.80
1 1/8	4.30	51.60	68.80	86.00
1 3/16	4.80	57.60	76.80	96.00
1 1/4	5.31	63.72	84.96	106.20
1 5/16	5.86	70.32	93.76	117.20
1 3/8	6.43	77.16	102.88	128.60
1 7/16	7.03	84.36	112.48	140.60
1 1/2	7.65	91.80	122.40	153.00
1 9/16	8.30	99.60	132.80	166.00
1 5/8	8.98	107.76	143.68	179.60
1 11/16	9.68	116.16	154.88	193.60
1 3/4	10.41	124.92	166.56	208.20
1 13/16	11.17	134.04	178.72	223.40
1 7/8	11.95	143.40	191.20	239.00
1 15/16	12.76	153.12	204.16	255.20
2	13.60	163.20	217.60	272.00
2 1/16	14.46	173.52	231.36	289.20
2 1/8	15.35	184.20	245.60	307.00

(continued on following page)

WEIGHT OF SQUARE STEEL BARS

(continued from preceding page)

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
2 9/16	16.27	195.24	260.32	325.40
2 1/4	17.21	206.52	275.36	344.40
2 5/16	18.18	218.16	290.88	363.60
2 3/8	19.18	230.16	306.88	383.60
2 7/16	20.20	242.40	323.20	404.00
2 1/2	21.25	255.00	340.00	425.00
2 9/16	22.33	267.96	357.28	446.60
2 5/8	23.43	281.16	374.88	468.60
2 3/4	25.71	308.52	411.36	514.20
2 7/8	28.10	337.20	449.60	562.00
3	30.60	367.20	489.60	612.00
3 1/8	33.20	398.40	531.20	664.00
3 1/4	35.91	430.92	574.50	718.20
3 3/8	38.73	464.76	619.68	774.60
3 1/2	41.65	499.80	666.40	833.00
3 3/4	47.81	573.72	764.96	956.20
4	54.40	652.80	870.40	1088.00
4 1/2	68.85	826.20	1101.60	1377.00
5	85.00	1020.00	1360.00	1700.00
6	122.40	1468.80	1958.40	2448.00

WEIGHT OF HEXAGON STEEL BARS

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
1/8	.046	.55	.74	.92
5/32	.072	.86	1.15	1.44
3/16	.104	1.25	1.66	2.08
7/32	.141	1.69	2.26	2.82
1/4	.184	2.21	2.94	3.68
9/32	.233	2.80	3.73	4.66
5/16	.288	3.46	4.61	5.76
11/32	.348	4.18	5.57	6.96
3/8	.414	4.97	6.62	8.28
7/16	.564	6.77	9.02	11.28
1/2	.736	8.83	11.78	14.72
9/16	.932	11.18	14.91	18.64
5/8	1.150	13.80	18.40	23.00
11/16	1.393	16.72	22.29	27.86
3/4	1.656	19.87	26.60	33.12
13/16	1.944	23.33	31.10	38.88
7/8	2.254	27.05	36.06	45.08
15/16	2.588	31.06	41.41	51.76
1	2.945	35.34	47.12	58.90
1 1/16	3.324	39.89	53.18	66.48
1 1/8	3.727	44.72	59.63	75.54
1 3/16	4.152	49.82	66.43	83.04
1 1/4	4.601	55.21	73.62	92.02
1 5/16	5.072	60.86	81.15	101.44
1 3/8	5.567	66.80	89.07	111.34
1 7/16	6.085	73.02	97.36	121.70
1 1/2	6.625	79.50	106.00	132.50
1 9/16	7.189	86.27	115.02	143.78
1 5/8	7.775	93.30	124.40	155.50
1 11/16	8.385	100.62	134.16	167.70
1 3/4	9.018	108.22	144.29	180.36
1 13/16	9.673	116.08	154.77	193.46
1 7/8	10.352	124.22	165.63	207.04
1 15/16	11.053	132.64	176.85	221.06
2	11.778	141.34	188.45	235.56

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WEIGHT OF HEXAGON STEEL BARS

(continued from preceding page)

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
2 9/16	12.525	150.30	200.40	250.50
2 5/8	13.296	159.55	212.74	265.92
2 11/16	14.089	169.07	225.42	281.78
2 3/4	14.907	178.88	238.51	298.14
2 13/16	15.746	188.95	251.94	314.92
2 7/8	16.609	199.31	265.74	332.18
2 15/16	17.494	209.93	279.90	349.88
3 1/2	18.403	220.84	294.45	368.06
3 9/16	19.335	232.02	309.36	386.70
3 5/8	20.289	243.47	324.62	405.78
3 3/4	22.268	267.22	356.29	445.39
3 7/8	24.338	292.06	389.41	486.76
4	26.500	318.00	424.00	530.00
4 1/8	28.755	345.06	460.08	575.10
4 1/4	31.101	372.12	496.16	620.20
4 3/8	33.540	402.48	536.64	670.80
4 1/2	36.070	432.84	577.12	721.40
4 3/4	41.407	496.88	662.51	828.14
5	47.112	565.34	753.79	942.24
5 1/2	59.636	715.63	954.18	1192.72

WEIGHT OF FLAT STEEL BARS

Size in Inches		Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
No. 12 x	3/8	0.139	1.67	2.22	2.78
	1/2	0.185	2.22	2.96	3.70
	5/8	0.232	2.78	3.71	4.64
	3/4	0.278	3.34	4.45	5.56
	7/8	0.324	3.89	5.18	6.48
	1	0.371	4.45	5.94	7.42
	1 1/8	0.416	5.99	6.66	8.32
	1 1/4	0.463	5.56	7.41	9.26
	1 3/8	0.510	6.12	8.16	10.20
	1 1/2	0.556	6.67	8.90	11.12
	1 3/4	0.648	7.78	10.37	12.96
	2	0.742	8.90	11.87	14.84
	2 1/4	0.834	10.01	13.34	16.68
	2 1/2	0.926	11.11	14.82	18.52
	2 3/4	1.019	12.23	16.30	20.38
	3	1.111	13.33	17.78	22.22
	3 1/2	1.297	15.56	20.75	25.94
	4	1.482	17.78	23.71	29.64
1/8 x	3/8	0.159	1.91	2.54	3.18
	1/2	0.213	2.56	3.41	4.26
	5/8	0.266	3.19	4.26	5.32
	3/4	0.319	3.83	5.10	6.38
	7/8	0.372	4.46	5.95	7.44
	1	0.425	5.10	6.80	8.50
	1 1/8	0.478	5.74	7.65	9.56
	1 1/4	0.531	6.37	8.50	10.62
	1 3/8	0.584	7.01	9.34	11.68
	1 1/2	0.638	7.66	10.21	12.76
	1 5/8	0.691	8.29	11.06	13.82
	1 3/4	0.744	8.93	11.90	14.88
	2	0.850	10.20	13.60	17.00
	2 1/4	0.956	11.47	15.30	19.12

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WEIGHT OF FLAT STEEL BARS

(continued from preceding page)

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
1/8 x 2½	1.063	12.76	17.01	21.26
2¾	1.169	14.03	18.70	23.38
3	1.275	15.30	20.40	25.50
3¼	1.381	16.57	22.10	27.62
3½	1.488	17.86	23.81	29.76
3¾	1.594	19.13	25.50	31.88
4	1.700	20.40	27.20	34.00
4½	1.913	22.96	30.61	38.26
5	2.125	25.50	34.00	42.50
5½	2.338	28.06	37.41	46.76
6	2.550	30.60	40.80	51.00
7	2.975	35.70	47.60	59.50
8	3.400	40.80	54.40	68.00
9	3.825	45.90	61.20	76.50
10	4.250	51.00	68.00	85.00
12	5.100	61.20	81.60	102.00
No. 10 x ⅜	0.172	2.06	2.75	3.44
½	0.228	2.74	3.65	4.56
⅝	0.284	3.41	4.54	5.68
¾	0.342	4.10	5.47	6.84
⅞	0.398	4.78	6.37	7.96
1	0.456	5.47	7.30	9.12
1⅛	0.513	6.16	8.21	10.26
1¼	0.570	6.84	9.12	11.40
1⅜	0.626	7.51	10.02	12.52
1½	0.683	8.20	10.93	13.66
1¾	0.797	9.56	12.75	15.94
2	0.911	10.93	14.58	18.22
2¼	1.025	12.30	16.40	20.50
2½	1.139	13.67	18.22	22.78
2¾	1.253	15.04	20.05	25.06
3	1.367	16.40	21.87	27.34
3¼	1.481	17.77	23.70	29.62
3½	1.595	19.14	25.52	31.90
4	1.822	21.86	29.15	36.44
4½	2.050	24.60	32.80	41.00
5	2.278	27.34	36.45	45.56
5½	2.506	30.07	40.10	50.12
6	2.734	32.81	43.74	54.68
7	3.188	38.26	51.01	63.76
8	3.644	43.73	58.30	72.88
9	4.100	49.20	65.60	82.00
5/32 x ¼	.133	1.60	2.13	2.66
5/16	.166	1.99	2.66	3.32
⅜	.199	2.39	3.18	3.98
3/16 ¼	.159	1.91	2.54	3.18
5/16	.199	2.39	3.18	3.98
⅜	.239	2.87	3.82	4.78
7/16	.279	3.35	4.46	5.58
½	.319	3.83	5.10	6.38
9/16	.359	4.31	5.74	7.18
⅝	.398	4.78	6.37	7.96
¾	.478	5.74	7.65	9.56
⅞	.558	6.70	8.93	11.16
1	.638	7.66	10.21	12.76

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WEIGHT OF FLAT STEEL BARS

(continued from preceding page)

Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
3/16 x 1⅛	.717	8.60	11.47	14.34
1¼	.797	9.56	12.75	15.94
1⅜	.877	10.52	14.03	17.54
1½	.956	11.47	15.30	19.12
1¾	1.116	13.39	17.86	22.32
1⅞	1.195	14.34	19.12	23.90
2	1.275	15.30	20.40	25.50
2¼	1.434	17.21	22.94	28.68
2½	1.594	19.13	25.50	31.88
2¾	1.753	21.04	28.05	35.06
3	1.913	22.96	30.61	38.26
3¼	2.072	24.86	33.15	41.44
3½	2.231	26.77	35.70	44.62
3¾	2.391	28.69	38.26	47.82
4	2.250	30.60	40.80	51.00
4½	2.868	34.42	45.89	57.36
5	3.188	38.26	51.01	63.76
6	3.825	45.90	61.20	76.50
8	5.100	61.20	81.60	102.00
10	6.380	76.56	102.08	127.60
12	7.650	91.80	122.40	153.00
1/4 x 5/16	.266	3.19	4.26	5.32
⅜	.319	3.83	5.10	6.38
7/16	.372	4.46	5.95	7.44
½	.425	5.10	6.80	8.50
9/16	.478	5.74	7.65	9.56
⅝	.531	6.37	8.50	10.62
11/16	.584	7.01	9.34	11.68
¾	.638	7.66	10.21	12.76
13/16	.691	8.29	11.06	13.82
⅞	.744	8.93	11.90	14.88
15/16	.797	9.56	12.75	15.94
1	.850	10.20	13.60	17.00
1⅛	.956	11.47	15.30	19.12
1¼	1.063	12.76	17.01	21.26
1⅜	1.169	14.03	18.70	23.38
1½	1.275	15.30	20.40	25.50
1⅝	1.381	16.57	22.10	27.62
1¾	1.488	17.86	23.81	29.76
1⅞	1.594	19.13	25.50	31.88
2	1.700	20.40	27.20	34.00
2¼	1.913	22.96	30.61	38.26
2½	2.125	25.50	34.00	42.50
2¾	2.338	28.06	37.41	46.76
3	2.550	30.60	40.80	51.00
3¼	2.763	33.16	44.21	55.26
3½	2.975	35.70	47.60	59.50
3¾	3.188	38.26	51.01	63.76
4	3.400	40.80	54.40	68.00
4¼	3.613	43.36	57.81	72.26
4½	3.825	45.90	61.20	76.50
5	4.250	51.00	68.00	85.00
5½	4.675	56.10	74.80	93.50
6	5.100	61.20	81.60	102.00
8	6.800	81.60	108.80	136.00
9	7.660	91.92	122.56	153.20
5/16 x ⅜	.398	4.78	6.37	7.96
7/16	.465	5.58	7.44	9.30

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Size in Inches		Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
5/16 x	½	.531	6.37	8.50	10.62
	9/16	.598	7.18	9.57	11.96
	⅝	.664	7.97	10.62	13.28
	11/16	.731	8.77	11.70	14.62
	¾	.797	9.56	12.75	15.94
	⅞	.930	11.16	14.88	18.60
	1	1.063	12.76	17.01	21.26
	1⅛	1.195	14.34	19.12	23.90
	1¼	1.328	15.94	21.25	26.56
	1⅜	1.461	17.53	23.38	29.22
	1½	1.594	19.13	25.50	31.88
	1¾	1.859	22.31	29.74	37.18
	2	2.125	25.50	34.00	42.50
	2⅛	2.258	27.10	36.13	45.16
	2¼	2.391	28.69	38.26	47.82
	2½	2.656	31.87	42.50	53.12
	2¾	2.922	35.06	46.75	58.44
	3	3.188	38.26	51.01	63.76
	3¼	3.453	41.45	55.25	69.06
	3½	3.719	44.63	59.50	74.38
	4	4.250	51.00	68.00	85.00
	4½	4.781	57.37	76.50	95.62
	5	5.313	63.76	85.01	106.26
	6	6.375	76.50	102.00	127.50
	8	8.500	102.00	136.00	170.00
	10	10.620	127.44	169.92	212.40
3/8 x	7/16	.558	6.70	8.93	11.16
	½	.638	7.66	10.21	12.76
	9/16	.717	8.60	11.47	14.34
	⅝	.797	9.56	12.75	15.94
	11/16	.877	10.25	14.03	17.54
	¾	.956	11.47	15.30	19.12
	⅞	1.116	13.39	17.86	22.32
	1	1.275	15.30	20.40	25.50
	1⅛	1.434	17.21	22.94	28.68
	1¼	1.594	19.13	25.50	31.88
	1⅜	1.753	21.04	28.05	35.06
	1½	1.913	22.96	30.61	38.26
	1⅝	2.072	24.86	33.15	41.44
	1¾	2.231	26.77	35.70	44.62
	1⅞	2.391	28.69	38.26	47.82
	2	2.550	30.60	40.80	51.00
	2¼	2.869	34.43	45.90	57.38
	2½	3.188	38.26	51.01	63.76
	2¾	3.506	42.07	56.10	70.12
	3	3.825	45.90	61.20	76.50
	3¼	4.144	49.73	66.30	82.88
	3½	4.463	53.56	71.41	89.26
	3¾	4.781	57.37	76.50	95.62
	4	5.100	61.20	81.60	102.00
	4¼	5.419	65.03	86.70	108.38
	4½	5.738	68.86	91.81	114.76
	5	6.375	76.50	102.00	127.50
	5½	7.013	84.16	112.21	140.26
	6	7.650	91.80	122.40	153.00
	8	10.200	122.40	163.20	204.00
	9	11.490	137.88	183.84	229.80
	10	12.760	153.12	204.16	255.20

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Size in Inches		Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
7/16 x	½	.744	8.93	11.90	14.88
	9/16	.837	10.04	13.39	16.74
	⅝	.930	11.16	14.88	18.60
	¾	1.116	13.39	17.86	22.32
	⅞	1.302	15.62	20.83	26.04
	1	1.488	17.86	23.81	29.86
	1⅛	1.673	20.08	26.77	33.46
	1¼	1.859	22.31	29.74	37.18
	1½	2.231	26.77	35.70	44.62
	1¾	2.603	31.24	41.65	52.06
	2	2.975	35.70	47.60	59.50
	2¼	3.347	40.16	53.55	66.94
	2½	3.719	44.63	59.50	74.38
	2¾	4.091	49.09	65.46	81.82
	3	4.463	53.56	71.41	89.26
	3¼	4.834	58.01	77.34	96.68
	3½	5.206	62.47	83.30	104.12
	4	5.950	71.40	95.20	119.00
	4½	6.694	80.33	107.10	133.88
	5	7.438	89.26	119.01	148.76
	6	8.952	107.42	143.23	179.04
1/2 x	9/16	.956	11.47	15.30	19.12
	⅝	1.063	12.76	17.01	21.26
	11/16	1.169	14.03	18.70	23.38
	¾	1.275	15.30	20.40	25.50
	13/16	1.382	16.58	22.11	27.64
	⅞	1.488	17.86	23.81	29.76
	1	1.700	20.40	27.20	34.00
	1⅛	1.913	22.96	30.61	38.26
	1¼	2.125	25.50	34.00	42.50
	1⅜	2.338	28.06	37.41	46.76
	1½	2.550	30.60	40.80	51.00
	1⅝	2.763	33.16	44.21	55.26
	1¾	2.975	35.70	47.60	59.50
	1⅞	3.188	38.26	51.01	63.76
	2	3.400	40.80	54.40	68.00
	2¼	3.825	45.90	61.20	76.50
	2½	4.250	51.00	68.00	85.00
	2¾	4.675	56.10	74.80	93.50
	3	5.100	61.20	81.60	102.00
	3¼	5.525	66.30	88.40	110.50
	3½	5.950	71.40	95.20	119.00
	3¾	6.375	76.50	102.00	127.50
	4	6.800	81.60	108.80	136.00
	4¼	7.225	86.70	115.60	144.50
	4½	7.650	91.80	122.40	153.00
	4¾	8.075	96.90	129.20	161.50
	5	8.500	102.00	136.00	170.00
	5¼	8.925	107.10	142.80	178.50
	5½	9.350	112.20	149.60	187.00
	5¾	9.775	117.30	156.40	195.50
	6	10.200	122.40	163.20	204.00
	8	13.600	163.20	217.60	272.00
	9	15.300	183.60	244.80	306.00
	10	17.000	204.00	272.00	340.00

(continued on following page)

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Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
9/16 x ⅜	1.200	14.40	19.20	24.00
¾	1.434	17.21	22.94	28.68
⅞	1.673	20.08	26.77	33.46
1	1.913	22.96	30.61	38.26
1¼	2.391	28.69	38.26	47.82
1½	2.869	34.43	45.90	57.38
1¾	3.347	40.16	53.55	66.94
2	3.825	45.90	61.20	76.50
2½	4.781	57.37	76.50	95.62
3	5.738	68.86	91.81	114.76
5/8 x 11/16	1.461	17.53	23.38	29.22
¾	1.594	19.13	25.50	31.88
13/16	1.727	20.72	27.63	34.54
⅞	1.859	22.31	29.74	37.18
1	2.125	25.50	34.00	42.50
1⅛	2.391	28.69	38.26	47.82
1¼	2.656	31.87	42.50	53.12
1⅜	2.922	35.06	46.75	58.44
1½	3.188	38.26	51.01	63.73
1⅝	3.453	41.44	55.25	69.06
1¾	3.719	44.63	59.50	74.38
1⅞	3.984	47.81	63.74	79.68
2	4.250	51.00	68.00	85.00
2¼	4.781	57.37	76.50	95.62
2½	5.313	63.76	85.01	106.26
2¾	5.844	70.13	93.50	116.88
3	6.375	76.50	102.00	127.50
3¼	6.906	82.87	110.50	138.12
3½	7.438	89.26	119.01	148.76
3¾	7.969	95.63	127.50	159.38
4	8.500	102.00	136.00	170.00
4¼	9.031	108.37	144.50	180.62
4½	9.563	114.76	153.01	191.26
4¾	10.094	121.13	161.50	201.88
5	10.625	127.50	170.00	212.50
5½	11.688	140.26	187.01	233.76
6	12.750	153.00	204.00	255.00
7	14.875	178.50	238.00	297.50
8	17.000	204.00	272.00	340.00
9	19.130	229.56	306.08	382.60
10	21.260	255.12	340.16	425.20
11/16 x ¾	1.753	21.04	28.05	35.06
1	2.338	28.06	37.41	46.76
1¼	2.922	35.06	46.75	58.44
1½	3.506	42.07	56.10	70.12
2	4.675	56.10	74.80	93.50
3/4 x 13/16	2.072	24.80	33.15	41.44
⅞	2.231	26.77	35.70	44.62
1	2.550	30.60	40.80	51.00
1⅛	2.869	34.43	45.90	57.38
1¼	3.188	38.26	51.01	63.76
1⅜	3.506	42.07	56.10	70.12
1½	3.825	45.90	61.20	76.50
1⅝	4.144	49.73	66.30	82.88
1¾	4.463	53.56	71.41	86.26
2	5.100	61.20	81.60	102.00
2¼	5.738	68.86	91.81	114.76
2½	6.375	76.50	102.00	127.50

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Size in Inches	Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
3/4 x 2¾	7.013	84.16	112.21	140.26
3	7.650	91.80	122.40	153.00
3¼	8.288	99.46	132.61	165.76
3½	8.925	107.10	142.80	178.50
4	10.200	122.40	163.20	204.00
4½	11.475	137.70	183.60	229.50
5	12.750	153.00	204.00	255.00
5½	14.205	168.30	224.40	280.50
6	15.300	183.60	244.80	306.00
8	20.400	244.80	326.40	408.00
9	22.950	275.40	367.20	459.00
10	25.500	306.00	408.00	510.00
7/8 x 1	2.975	35.70	47.60	59.50
1⅛	3.347	40.16	53.55	66.94
1¼	3.719	44.63	59.50	74.38
1⅜	4.091	49.09	65.46	81.82
1½	4.463	53.56	71.41	89.26
1¾	5.206	62.47	83.30	104.12
2	5.950	71.40	95.20	119.00
2¼	6.694	80.33	107.10	133.88
2½	7.433	89.26	119.01	148.76
2¾	8.181	98.17	130.90	163.62
3	8.925	107.10	142.80	178.50
3¼	9.669	116.03	154.70	193.38
3½	10.413	124.96	166.61	208.26
4	11.900	142.80	190.40	238.00
4½	13.888	160.66	214.21	267.76
5	14.875	178.50	238.00	297.50
5½	16.360	196.32	261.76	327.20
6	17.850	214.20	285.60	357.00
8	23.800	285.60	380.80	476.00
1 x 1⅛	3.825	45.90	61.20	76.50
1¼	4.250	51.00	68.00	85.00
1⅜	4.675	56.10	74.80	93.50
1½	5.100	61.20	81.60	102.00
1⅝	5.525	66.30	88.40	110.50
1¾	5.950	71.40	95.20	119.00
2	6.800	81.60	108.80	136.00
2¼	7.650	91.80	122.40	153.00
2½	8.500	102.00	136.00	170.00
2¾	9.350	112.20	149.60	187.00
3	10.200	122.40	163.20	204.00
3¼	11.050	132.60	176.80	221.00
3½	11.900	142.80	190.40	238.00
3¾	12.750	153.00	204.00	255.00
4	13.600	163.20	217.60	272.00
4½	15.300	183.60	244.80	306.00
5	17.000	204.00	272.00	340.00
5½	18.700	224.40	299.20	374.00
6	20.400	244.80	326.40	408.00
8	27.200	326.40	435.20	544.00
1⅛ x 1¼	4.781	57.37	76.50	95.62
1⅜	5.259	63.11	84.14	105.18
1½	5.738	68.86	91.81	114.76
1⅝	6.216	74.59	99.46	124.32

(continued on following page)

WEIGHT OF FLAT STEEL BARS

(continued from preceding page)

Size in Inches		Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
1⅛ x	1¾	6.694	80.33	107.10	133.88
	2	7.650	91.80	122.40	153.00
	2¼	8.606	103.27	137.70	172.12
	2½	9.563	114.76	153.01	191.26
	3	11.475	137.70	183.60	229.50
	4	15.300	183.60	244.80	306.00
	5	19.130	229.56	306.08	382.60
	6	22.950	275.40	367.20	459.00
1¼ x	1⅜	5.844	70.13	93.50	116.88
	1½	6.375	76.50	102.00	127.50
	1⅝	6.906	82.87	110.50	138.12
	1¾	7.438	89.26	119.01	148.76
	1⅞	7.969	95.63	127.50	159.38
	2	8.500	102.00	136.00	170.00
	2¼	9.563	114.76	153.01	191.26
	2½	10.625	127.50	170.00	212.50
	2¾	11.688	140.26	187.01	233.76
	3	12.750	153.00	204.00	255.00
	3¼	13.813	165.76	221.01	276.26
	3½	14.875	178.50	238.00	297.50
	4	17.000	204.00	272.00	340.00
	4½	19.125	229.50	306.00	382.50
	5	21.250	255.50	340.00	425.00
	5½	23.375	280.50	374.00	467.50
	6	25.500	306.00	408.00	510.00
	8	34.000	408.00	544.00	680.00
1⅜	2	9.35	112.20	149.60	187.00
	3	14.03	168.36	224.48	280.60
1½	1⅝	8.29	99.48	132.64	165.80
	1¾	8.93	107.16	142.88	178.60
	2	10.20	122.40	163.20	204.00
	2¼	11.48	137.76	183.68	229.60
	2½	12.75	153.00	204.00	255.00
	2¾	14.03	168.36	224.48	280.60
	3	15.30	183.60	244.80	306.00
	3¼	16.58	198.96	265.28	331.60
	3½	17.85	214.20	285.60	357.00
	4	20.40	244.80	326.40	408.00
	4½	22.95	275.40	367.20	459.00
	5	25.50	306.00	408.00	510.00
	5½	28.05	336.60	448.80	561.00
	6	30.60	367.20	489.60	612.00
	8	40.80	489.60	652.80	816.00
1¾	2	11.90	142.80	190.40	238.00
	2¼	13.39	160.68	214.24	267.80
	2½	14.88	178.56	238.08	297.60
	2¾	16.36	196.32	261.76	327.20
	3	17.85	214.20	285.60	357.00
	3¼	19.34	232.08	309.44	386.80
	3½	20.83	249.96	333.28	416.60
	4	23.80	285.60	380.80	476.00
	4½	26.78	321.36	428.48	535.60
	5	29.75	357.00	476.00	595.00
	5½	32.73	392.76	523.68	654.60
	6	35.70	428.40	571.20	714.00

(continued on following page)

WEIGHT OF FLAT STEEL BARS

(continued from preceding page)

Size in Inches		Wt. per Ft. Lbs.	Wt. of 12' bar	Wt. of 16' bar	Wt. of 20' bar
2 x	2¼	15.30	183.60	244.80	306.00
	2½	17.00	204.00	272.00	340.00
	2¾	18.70	224.40	299.20	374.00
	3	20.40	244.80	326.40	408.00
	3¼	22.10	265.20	353.60	442.00
	3½	23.80	285.60	380.80	476.00
	4	27.20	326.40	435.20	544.00
	4½	30.60	367.20	489.60	612.00
	5	34.00	408.00	544.00	680.00
	6	40.80	489.60	652.80	816.00
	8	54.40	652.80	870.40	1088.00
2¼ x	2½	19.13	229.56	306.08	382.60
	2¾	21.04	252.48	336.64	420.80
	3	22.95	275.40	367.20	459.00
	3¼	24.86	298.32	397.76	497.20
	3½	26.78	321.36	428.48	535.60
	4	30.60	367.20	489.60	612.00
	4½	34.43	413.16	550.80	688.60
	5	38.25	459.00	612.00	765.00
	6	45.90	550.80	734.40	918.00
2½ x	2¾	23.38	280.56	374.08	467.60
	3	25.50	306.00	408.00	510.00
	3¼	27.63	331.56	442.08	552.60
	3½	29.75	357.00	476.00	595.00
	4	34.00	408.00	544.00	580.00
	4½	38.25	459.00	612.00	765.00
	5	42.50	510.00	680.00	850.00
	6	51.00	612.00	816.00	1020.00
3 x	4	40.80	489.60	652.80	816.00
	5	51.00	612.00	816.00	1020.00
	6	61.20	734.40	979.20	1224.00
4 x	6	81.60	979.20	1305.60	1632.00

STEEL PLATES, THEORETICAL WEIGHT PER SQUARE FOOT

Size in Inches	Wt. per Square Ft. Lbs.	Size in Inches	Wt. per Square Ft. Lbs.	Size in Inches	Wt. per Square Ft. Lbs.
3/16	7.65	1⅛	55.16	4	163.40
¼	10.21	1½	61.26	4¼	173.60
5/16	12.76	1⅝	66.37	4½	183.80
⅜	15.32	1¾	71.47	5	204.20
7/16	17.87	1⅞	76.58	5½	224.60
½	20.42	2	81.68	6	245.00
9/16	22.97	2¼	91.89	6½	265.50
⅝	25.53	2½	102.10	7	285.90
¾	30.63	2¾	112.30	7½	306.30
⅞	35.74	3	122.50	8	326.70
1	40.84	3¼	132.70	9	367.60
1⅛	45.95	3½	142.90	10	408.40
1¼	51.05	3¾	153.20	12	490.10

CONVERSION TABLE OF INCHES INTO DECIMALS OF A FOOT

	0”	1”	2”	3”	4”	5”	
0”	.0000	.0833	.1667	.2500	.3333	.4167	0”
1/32”	.0026	.0859	.1693	.2526	.3359	.4193	1/32”
1/16”	.0052	.0885	.1719	.2552	.3385	.4219	1/16”
3/32”	.0078	.0911	.1745	.2578	.3411	.4245	3/32”
1/8”	.0104	.0938	.1771	.2604	.3438	.4271	1/8”
5/32”	.0130	.0964	.1797	.2630	.3464	.4297	5/32”
3/16”	.0156	.0990	.1823	.2656	.3490	.4323	3/16”
7/32”	.0182	.1016	.1849	.2682	.3516	.4349	7/32”
1/4”	.0208	.1042	.1875	.2708	.3542	.4375	1/4”
9/32”	.0234	.1068	.1901	.2734	.3568	.4401	9/32”
5/16”	.0260	.1094	.1927	.2760	.3594	.4427	5/16”
11/32”	.0286	.1120	.1953	.2786	.3620	.4453	11/32”
3/8”	.0313	.1146	.1979	.2813	.3646	.4479	3/8”
13/32”	.0339	.1172	.2005	.2839	.3672	.4505	13/32”
7/16”	.0365	.1198	.2031	.2865	.3698	.4531	7/16”
15/32”	.0391	.1224	.2057	.2891	.3724	.4557	15/32”
1/2”	.0417	.1250	.2083	.2917	.3750	.4583	1/2”
17/32”	.0443	.1276	.2109	.2943	.3776	.4609	17/32”
9/16”	.0469	.1302	.2135	.2969	.3802	.4635	9/16”
19/32”	.0495	.1328	.2161	.2995	.3828	.4661	19/32”
5/8”	.0521	.1354	.2188	.3021	.3854	.4688	5/8”
21/32”	.0547	.1380	.2214	.3047	.3880	.4714	21/32”
11/16”	.0573	.1406	.2240	.3073	.3906	.4740	11/16”
23/32”	.0599	.1432	.2266	.3099	.3932	.4766	23/32”
3/4”	.0625	.1458	.2292	.3125	.3958	.4792	3/4”
25/32”	.0651	.1484	.2318	.3151	.3984	.4818	25/32”
13/16”	.0677	.1510	.2344	.3177	.4010	.4844	13/16”
27/32”	.0703	.1536	.2370	.3203	.4036	.4870	27/32”
7/8”	.0729	.1563	.2396	.3229	.4063	.4896	7/8”
29/32”	.0755	.1589	.2422	.3255	.4089	.4922	29/32”
15/16”	.0781	.1615	.2448	.3281	.4115	.4948	15/16”
31/32”	.0807”	.1641	.2474	.3307	.4141	.4974	31/32”
	0”	1”	2”	3”	4”	5”	

(continued on following page)

CONVERSION TABLE OF INCHES INTO DECIMALS OF A FOOT

	6”	7”	8”	9”	10”	11”	
0”	.5000	.5833	.6667	.7500	.8333	.9167	0”
1/32”	.5026	.5859	.6693	.7526	.8359	.9193	1/32”
1/16”	.5052	.5885	.6719	.7552	.8385	.9219	1/16”
3/32”	.5078	.5911	.6745	.7578	.8411	.9245	3/32”
1/8”	.5104	.5938	.6771	.7604	.8438	.9271	1/8”
5/32”	.5130	.5964	.6797	.7630	.8464	.9297	5/32”
3/16”	.5156	.5990	.6823	.7656	.8490	.9323	3/16”
7/32”	.5182	.6016	.6849	.7682	.8516	.9349	7/32”
1/4”	.5208	.6042	.6875	.7708	.8542	.9375	1/4”
9/32”	.5234	.6068	.6901	.7734	.8568	.9401	9/32”
5/16”	.5260	.6094	.6927	.7760	.8594	.9427	5/16”
11/32”	.5286	.6120	.6953	.7786	.8620	.9453	11/32”
3/8”	.5313	.6146	.6979	.7813	.8646	.9479	3/8”
13/32”	.5339	.6172	.7005	.7839	.8672	.9505	13/32”
7/16”	.5365	.6198	.7031	.7865	.8698	.9531	7/16”
15/32”	.5391	.6224	.7057	.7891	.3724	.9557	15/32”
1/2”	.5417	.6250	.7083	.7917	.8750	.9583	1/2”
17/32”	.5443	.6276	.7109	.7943	.8776	.9609	17/32”
9/16”	.5469	.6302	.7135	.7969	.8802	.9635	9/16”
19/32”	.5495	.6328	.7161	.7995	.8828	.9661	19/32”
5/8”	.5521	.6354	.7188	.8021	.8854	.9688	5/8”
21/32”	.5547	.6380	.7214	.8047	.8880	.9714	21/32”
11/16”	.5573	.6406	.7240	.8073	.8906	.9740	11/16”
23/32”	.5599	.6432	.7266	.8099	.8932	.9766	23/32”
3/4”	.5625	.6458	.7292	.8125	.8958	.9792	3/4”
25/32”	.5651	.6484	.7318	.8151	.8984	.9818	25/32”
13/16”	.5677	.6510	.7344	.8177	.9010	.9844	13/16”
27/32”	.5703	.6536	.7370	.8203	.9036	.9870	27/32”
7/8”	.5729	.6563	.7396	.8229	.9063	.9896	7/8”
29/32”	.5755	.6589	.7422	.8255	.9089	.9922	29/32”
15/16”	.5781	.6615	.7448	.8281	.9115	.9948	15/16”
31/32”	.5807”	.6641	.7474	.8307	.9141	.9974	31/32”
	6”	7”	8”	9”	10”	11”	

Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft
1/16		13/64	
1/8		25/64	
3/16		19/32	
1/4		25/32	
5/16		63/64	
3/8		1 11/64	
7/16		1 3/8	
1/2		1 37/64	
9/16		1 49/64	
5/8"		1 31/32	
11/16		2 11/64	
3/4		2 23/64	
13/16		2 35/64	
7/8		2 3/4	
15/16		2 15/16	
1		3 3/64	.0055
1 1/8		3 3/16	.0069
1 1/4		3 15/16	.0085
1 3/8		4 5/16	.0103
1 1/2		4 11/16	.0123
1 5/8		5 1/8	.0144
1 3/4		5 1/2	.0167
1 7/8		5 7/8	.0192
2		6 5/16	.0218
2 1/8		6 11/16	.0246
2 1/4		7 1/16	.0276
2 3/8		7 7/16	.0308
2 1/2		7 7/8	.0341
2 5/8		8 1/4	.0376
2 3/4		8 5/8	.0412
2 7/8		9 1/16	.0451
3		9 7/16	.0491
3 1/8		9 13/16	.0533
3 1/4		10 3/16	.0576
3 3/8		10 5/8	.0621
3 1/2		11	.0668
3 5/8		11 3/8	.0717
3 3/4		11 3/4	.0767
3 7/8	1	3/16	.0819
4	1	9/16	.0873
4 1/8	1	15/16	.0928
4 1/4	1	1 3/8	.0985
4 3/8	1	1 7/4	.1044
4 1/2	1	2 1/8	.1104
4 5/8	1	2 1/2	.1167
4 3/4	1	2 15/16	.1231
4 7/8	1	3 3/16	.1296
5	1	3 11/16	.1364
5 1/8	1	4 1/8	.1433
5 1/4	1	4 1/2	.1503
5 3/8	1	4 7/8	.1576
5 1/2	1	5 1/4	.1650
5 5/8	1	5 11/16	.1726
5 3/4	1	6 1/8	.1803
5 7/8	1	6 7/16	.1883
6	1	6 7/8	.1964
6 1/8	1	7 1/4	.2046
6 1/4	1	7 7/8	.2131
6 3/8	1	8	.2217
6 1/2	1	8 7/16	.2304
6 5/8	1	8 13/16	.2394
6 3/4	1	9 7/16	.2485
6 7/8	1	9 5/8	.2578
7	1	10	.2673
7 1/8	1	10 3/8	.2769
7 1/4	1	10 3/4	.2867
7 3/8	1	11 7/16	.2967
7 1/2	1	11 9/16	.3068
7 5/8	1	11 15/16	.3171
7 3/4	2	3/8	.3276
7 7/8	2	3/4	.3382
8	2	1 1/8	.3491
8 1/8	2	1 1/2	.3601
8 1/4	2	1 15/16	.3712
8 3/8	2	2 5/16	.3826
8 1/2	2	2 11/16	.3941
8 5/8	2	3 1/8	.4057
8 3/4	2	3 1/2	.4176
8 7/8	2	3 7/8	.4296
9	2	4 1/4	.4418
9 1/8	2	4 11/16	.4541
9 1/4	2	5 7/16	.4667
9 3/8	2	5 7/16	.4794
9 1/2	2	5 7/8	.4922
9 3/8	2	6 1/4	.5053
9 3/4	2	6 5/8	.5185
9 7/8	2	7	.5319
10	2	7 7/16	.5454
10 1/8	2	7 13/16	.5591
10 1/4	2	8 3/16	.5730
10 3/8	2	8 5/8	.5871
10 1/2	2	9	.6013
10 5/8	2	9 3/8	.6157
10 3/4	2	9 3/4	.6303
10 7/8	2	10 3/16	.6450
11	2	10 9/16	.6600
11 1/8	2	10 15/16	.6750
11 1/4	2	11 5/16	.6903
11 3/8	2	11 3/4	.7057
11 1/2	3	1/8	.7213
11 5/8	3	1/2	.7371
11 3/4	3	15/16	.7530
11 7/8	3	1 7/16	.7691

(continued on following page)

Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft
12	3	1 11/16	.7854
12 1/8	3	2 1/16	.8019
12 1/4	3	2 7/16	.8185
12 3/8	3	2 7/8	.8353
12 1/2	3	3 1/4	.8523
12 5/8	3	3 5/8	.8694
12 3/4	3	4	.8867
12 7/8	3	4 7/16	.9041
13	3	4 13/16	.9218
13 1/8	3	5 3/16	.9396
13 1/4	3	5 5/8	.9576
13 3/8	3	6	.9757
13 1/2	3	6 3/8	.9940
13 5/8	3	6 3/4	1.0130
13 3/4	3	7 3/16	1.0310
13 7/8	3	7 9/16	1.0500
14	3	7 15/16	1.0690
14 1/8	3	8 3/8	1.0880
14 1/4	3	8 3/4	1.1080
14 3/8	3	9 1/8	1.1270
14 1/2	3	9 1/2	1.1470
14 5/8	3	9 15/16	1.1670
14 3/4	3	10 5/16	1.1870
14 7/8	3	10 11/16	1.2070
15	3	11 1/16	1.2270
15 1/8	3	11 1/2	1.2480
15 1/4	3	11 7/8	1.2680
15 3/8	4	1/4	1.2890
15 1/2	4	11/16	1.3100
15 5/8	4	1 1/16	1.3320
15 3/4	4	1 1/2	1.3530
15 7/8	4	1 7/8	1.3750
16	4	2 1/4	1.3960
16 1/8	4	2 5/8	1.4180
16 1/4	4	3 1/16	1.4400
16 3/8	4	3 7/16	1.4630
16 1/2	4	3 13/16	1.4850
16 5/8	4	4 1/4	1.5070
16 3/4	4	4 5/8	1.5300
16 7/8	4	5	1.5530
17	4	5 3/8	1.5760
17 1/8	4	5 3/4	1.6000
17 1/4	4	6 7/16	1.6230
17 3/8	4	6 9/16	1.6470
17 1/2	4	6 15/16	1.6700
17 5/8	4	7 3/8	1.6940
17 3/4	4	7 3/4	1.7180
17 7/8	4	8 1/8	1.7430
18	4	8 1/2	1.7670
18 1/8	4	8 15/16	1.7920
18 1/4	4	9 5/16	1.8170
18 3/8	4	9 3/4	1.842
18 1/2	4	10 1/8	1.867
18 5/8	4	10 1/2	1.892
18 3/4	4	10 7/8	1.918
18 7/8	4	11 5/16	1.943
19	4	11 11/16	1.969
19 1/8	5	1/16	1.995
19 1/4	5	7/16	2.021
19 3/8	5	7/8	2.047
19 1/2	5	1 1/4	2.074
19 5/8	5	1 5/8	2.101
19 3/4	5	2	2.127
19 7/8	5	2 7/16	2.155
20	5	2 13/16	2.182
20 1/8	5	3 1/4	2.209
20 1/4	5	3 5/8	2.237
20 3/8	5	4	2.264
20 1/2	5	4 3/8	2.292
20 5/8	5	4 3/4	2.320
20 3/4	5	5 9/16	2.348
20 7/8	5	5 9/16	2.377
21	5	5 15/16	2.405
21 1/8	5	6 3/8	2.434
21 1/4	5	6 3/4	2.463
21 3/8	5	7 1/8	2.492
21 1/2	5	7 1/2	2.521
21 5/8	5	7 7/8	2.551
21 3/4	5	8 9/16	2.580
21 7/8	5	8 11/16	2.610
22	5	9 1/16	2.640
22 1/8	5	9 1/2	2.670
22 1/4	5	9 7/8	2.700
22 3/8	5	10 1/4	2.730
22 1/2	5	10 5/8	2.761
22 5/8	5	11 1/16	2.792
22 3/4	5	11 7/16	2.823
22 7/8	5	11 13/16	2.854
23	6	1/4	2.885
23 1/8	6	5/8	2.917
23 1/4	6	1	2.948
23 3/8	6	1 3/8	2.980
23 1/2	6	1 13/16	3.012
23 5/8	6	2 3/16	3.044
23 3/4	6	2 5/8	3.076
23 7/8	6	3	3.109
24	6	3 3/8	3.142
24 1/4	6	4 3/16	3.207
24 1/2	6	4 15/16	3.274
24 3/4	6	5 3/4	3.341
25	6	6 1/2	3.409
25 1/4	6	7 5/16	3.477
25 1/2	6	8 1/8	3.547
25 3/4	6	8 7/8	3.616

(continued on following page)

Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft
(continued from preceding page)			
26	6	9 5/8	3.687
26 1/4	6	10 7/16	3.758
26 1/2	6	11 1/4	3.830
26 3/4	7	0	3.903
27	7	13/16	3.976
27 1/4	7	1 5/8	4.050
27 1/2	7	2 3/8	4.125
27 3/4	7	3 1/8	4.200
28	7	3 15/16	4.276
28 1/4	7	4 3/4	4.353
28 1/2	7	5 1/2	4.430
28 3/4	7	6 1/4	4.508
29	7	7 1/16	4.587
29 1/4	7	7 7/8	4.666
29 1/2	7	8 5/8	4.746
29 3/4	7	9 7/16	4.827
30	7	10 1/4	4.909
30 1/4	7	11	4.991
30 1/2	7	11 13/16	5.074
30 3/4	8	9/16	5.157
31	8	1 3/8	5.241
31 1/4	8	2 3/16	5.326
31 1/2	8	2 15/16	5.412
31 3/4	8	3 3/4	5.498
32	8	4 1/2	5.585
32 1/4	8	5 5/16	5.673
32 1/2	8	6 1/16	5.761
32 3/4	8	6 7/8	5.850
33	8	7 11/16	5.940
33 1/4	8	8 7/16	6.030
33 1/2	8	9 1/4	6.121
33 3/4	8	10	6.213
34	8	10 13/16	6.305
34 1/4	8	11 5/8	6.398
34 1/2	9	3/8	6.492
34 3/4	9	1 3/16	6.586
35	9	1 15/16	6.681
35 1/4	9	2 3/4	6.777
35 1/2	9	3 1/2	6.874
35 3/4	9	4 5/16	6.971
36	9	5 1/16	7.069
36 1/4	9	5 7/8	7.167
36 1/2	9	6 5/8	7.266
36 3/4	9	7 7/16	7.366
37	9	8 1/4	7.467
37 1/4	9	9	7.568
37 1/2	9	9 13/16	7.670
37 3/4	9	10 9/16	7.770
38	9	11 3/8	7.875
38 1/4	10	1/8	7.979
38 1/2	10	15/16	8.081
38 3/4	10	1 11/16	8.189

Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft
39	10	2 1/2	8.295
39 1/4	10	3 1/4	8.403
39 1/2	10	4 1/16	8.509
39 3/4	10	4 7/8	8.618
40	10	5 5/8	8.726
40 1/4	10	6 7/16	8.831
40 1/2	10	7 3/16	8.941
40 3/4	10	8	9.051
41	10	8 3/4	9.168
41 1/4	10	9 9/16	9.280
41 1/2	10	10 3/8	9.391
41 3/4	10	11 1/8	9.501
42	10	11 15/16	9.621
42 1/4	11	1/16	9.736
42 1/2	11	1 1/2	9.851
42 3/4	11	2 1/4	9.968
43	11	3 1/16	10.084
43 1/4	11	3 13/16	10.202
43 1/2	11	4 9/8	10.320
43 3/4	11	5 3/8	10.439
44	11	6 3/16	10.559
44 1/4	11	7	10.679
44 1/2	11	7 3/4	10.800
44 3/4	11	8 9/16	10.922
45	11	9 3/8	11.044
45 1/4	11	10 1/8	11.161
45 1/2	11	10 15/16	11.290
45 3/4	11	11 11/16	11.415
46	12	1/2	11.540
46 1/4	12	1 1/4	11.666
46 1/2	12	2 1/16	11.793
46 3/4	12	2 13/16	11.920
47	12	3 5/8	12.048
47 1/4	12	4 7/16	12.177
47 1/2	12	5 3/16	12.306
47 3/4	12	6	12.436
48	12	6 3/4	12.566
48 1/4	12	7 9/16	12.697
48 1/2	12	8 3/16	12.829
48 3/4	12	9 1/8	12.961
49	12	9 15/16	13.095
49 1/4	12	10 11/16	13.229
49 1/2	12	11 1/2	13.363
49 3/4	13	1/4	13.499
50	13	1 1/16	13.635
50 1/4	13	1 13/16	13.772
50 1/2	13	2 9/8	13.909
50 3/4	13	3 3/8	14.047
51	13	4 3/16	14.186
51 1/4	13	5	14.325
51 1/2	13	5 3/4	14.465
51 3/4	13	6 9/16	14.606

(continued on following page)

Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft
(continued from preceding page)			
52	13	7 5/16	14.748
52 1/4	13	8 1/8	14.890
52 1/2	13	8 7/8	15.033
52 3/4	13	9 11/16	15.176
53	13	10 1/2	15.320
53 1/4	13	11 1/4	15.465
53 1/2	14	1/16	15.611
53 3/4	14	13/16	15.757
54	14	1 5/8	15.904
54 1/4	14	2 3/8	16.052
54 1/2	14	3 3/16	16.200
54 3/4	14	4	16.349
55	14	4 3/4	16.499
55 1/4	14	5 9/16	16.649
55 1/2	14	6 5/16	16.800
55 3/4	14	7 1/8	16.952
56	14	7 7/8	17.104
56 1/4	14	8 11/16	17.257
56 1/2	14	9 1/2	17.411
56 3/4	14	10 1/4	17.565
57	14	11 1/16	17.721
57 1/4	14	11 13/16	17.876
57 1/2	15	5/8	18.032
57 3/4	15	1 3/8	18.190
58	15	2 3/16	18.348
58 1/4	15	2 15/16	18.506
58 1/2	15	3 3/4	18.665
58 3/4	15	4 5/16	18.825
59	15	5 9/16	18.986
59 1/4	15	6 1/8	19.147
59 1/2	15	6 7/8	19.309
59 3/4	15	7 11/16	19.471
60	15	8 7/16	19.635
60 1/4	15	9 1/4	19.799
60 1/2	15	10 1/16	19.964
60 3/4	15	10 13/16	20.129
61	15	11 5/8	20.295
61 1/4	16	3/8	20.462
61 1/2	16	1 3/16	20.623
61 3/4	16	1 15/16	20.797
62	16	2 3/4	20.966
62 1/4	16	3 9/16	21.135
62 1/2	16	4 5/16	21.306
62 3/4	16	5 1/8	21.476
63	16	5 7/8	21.648
63 1/4	16	6 11/16	21.819
63 1/2	16	7 7/16	21.992
63 3/4	16	8 1/4	22.166
64	16	9	22.340
64 1/4	16	9 13/16	22.515
64 1/2	16	10 9/8	22.695
64 3/4	16	11 3/8	22.867

Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft
65	17	3/16	23.044
65 1/4	17	15/16	23.222
65 1/2	17	1 3/4	23.400
65 3/4	17	2 1/2	23.578
666	17	3 5/16	23.758
66 1/4	17	4 1/8	23.939
66 1/2	17	4 7/8	24.119
66 3/4	17	5 11/16	24.307
67	17	6 7/16	24.484
67 1/4	17	7 1/4	24.667
67 1/2	17	8	24.851
67 3/4	17	8 13/16	25.035
68	17	9 9/8	25.220
68 1/4	17	10 7/8	25.406
68 1/2	17	11 3/16	25.592
68 3/4	17	11 15/16	25.779
69	18	3/4	25.967
69 1/4	18	1 9/16	26.156
69 1/2	18	2 3/16	26.345
69 3/4	18	3 1/8	26.535
70	18	3 15/16	26.725
70 1/4	18	4 11/16	26.917
70 1/2	18	5 1/2	27.109
70 3/4	18	6 1/4	27.301
71	18	7 1/16	27.494
71 1/4	18	7 13/16	27.688
71 1/2	18	8 5/8	27.883
71 3/4	18	9 7/16	28.078
72	18	10 1/16	28.274
72 1/2	18	11 3/4	28.668
73	19	1 1/16	29.065
73 1/2	19	2 15/16	29.465
74	19	4 1/2	29.867
74 1/2	19	6 1/16	30.272
75	19	7 3/8	30.680
75 1/2	19	9 7/16	31.090
76	19	10 3/4	31.503
76 1/2	20	5/16	31.919
77	20	1 7/8	32.338
77 1/2	20	3 1/2	32.759
78	20	5 1/16	33.183
78 1/2	20	6 5/8	33.610
79	20	8 7/16	34.039
79 1/2	20	9 3/4	34.472
80	20	11 5/16	34.907
80 1/2	21	7/8	35.344
81	21	2 7/16	35.785
81 1/2	21	4 1/16	36.228
82	21	5 5/8	36.674
82 1/2	21	7 7/16	37.122
83	21	8 3/4	37.574
83 1/2	21	10 5/16	38.028

(continued on following page)

CIRCUMFERENCES AND AREAS OF CIRCLES

Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft	Dia. In.	CIRCUMFERENCE Ft.	CIRCUMFERENCE Inches	Area Sq. Ft
84	21	11 1/8	38.485	102	26	8 7/16	56.745
84 1/2	22	1 1/2	38.944	102 1/2	26	10	57.303
85	22	3 1/16	39.406	103	26	11 3/16	57.863
85 1/2	22	4 5/8	39.871	103 1/2	27	1 3/16	58.426
86	22	6 3/16	40.339				
86 1/2	22	7 3/4	40.809	104	27	2 3/4	58.992
87	22	9 5/16	41.283	104 1/2	27	4 5/16	59.561
87 1/2	22	10 7/8	41.758	105	27	5 7/8	60.132
				105 1/2	27	7 7/16	60.706
88	23	7/16	42.237	106	27	9	61.283
88 1/2	23	2 1/16	42.718	106 1/2	27	10 9/16	61.863
89	23	3 5/8	43.202	107	28	1/8	62.445
89 1/2	23	5 3/16	43.689	107 1/2	28	1 3/4	63.030
90	23	6 3/4	44.179				
90 1/2	23	8 5/16	44.671	108	28	3 5/16	63.617
91	23	9 7/8	45.166	108 1/2	28	4 7/8	64.208
91 1/2	23	11 7/16	45.664	109	28	6 7/16	34.801
				109 1/2	28	8	65.397
92	24	1	46.164	110	28	9 9/16	65.995
92 1/2	24	2 5/8	46.667	110 1/2	28	11 1/8	66.597
93	24	4 3/16	47.173	111	29	11/16	67.201
93 1/2	24	5 3/4	47.682	111 1/2	29	2 5/16	67.808
94	24	7 5/16	48.193	112	29	3 7/8	68.417
94 1/2	24	8 7/8	48.707	112 1/2	29	5 7/16	69.029
95	24	10 7/16	49.224	113	29	7	69.644
95 1/2	25	0	49.743	113 1/2	29	8 9/16	70.262
				114	29	10 1/8	70.882
96	25	1 9/16	50.266	114 1/2	29	11 11/16	71.505
96 1/2	25	3 3/16	50.791	115	30	1 5/16	72.131
97	25	4 3/4	51.318	115 1/2	30	2 7/8	72.760
97 1/2	25	6 9/16	51.849	116	30	4 7/16	73.391
98	25	7 7/8	52.382	116 1/2	30	5 15/16	74.026
98 1/2	25	9 7/16	52.918	117	30	7 9/16	74.662
99	25	11	53.456	117 1/2	30	9 1/8	75.301
99 1/2	26	5/16	53.998	118	30	10 11/16	75.944
				118 1/2	31	1/4	76.589
100	26	2 9/16	54.542	119	31	1 13/16	77.236
100 1/2	26	3 3/4	55.088	119 1/2	31	3 3/8	77.887
101	26	5 5/16	55.638	120	31	4 15/16	78.540
101 1/2	26	6 7/8	56.190				

SPECIAL FORMED PARTS

We can furnish an unlimited selection of special parts formed from sheets and plates. Formed on pressbrake equipment using standard dies on hand for all popular sheet and plate thicknesses. Where quantities warrant, special dies can be developed for more intricate sections.

HARDNESS CONVERSION TABLE

Brinell		Rockwell		Shore T.S.		Brinell		Rockwell		Shore T.S.	
Dia.	No. *	B	C	Scler 1000 Hard PSI No.	Appr.	Dia.	No. *	B	C	Scler 1000 Hard PSI No.	Appr.
2.25	745		65.3	91		3.75	262	(103.0)	26.6	39	127
2.30	712					3.80	255	(102.0)	25.4	38	123
2.35	682		61.7	84		3.85	248	(101.0)	24.2	37	120
2.40	653		60.0	81		3.90	241	100.0	22.8	36	116
2.45	627		58.7	79		3.95	235	99.0	21.7	35	114
2.50	601		57.3	77		4.00	229	98.2	20.5	34	111
2.55	578		56.0	75		4.05	223	97.3	(18.8)		
2.60	555		54.7	73	298	4.10	217	96.4	(17.5)	33	105
2.65	534		53.5	71	288	4.15	212	95.5	(16.0)		102
2.70	514		52.1	70	274	4.20	207	94.6	(15.2)	32	100
2.75	495		51.0	68	264	4.25	201	93.8	(13.8)	31	98
2.80	477		49.6	66	252	4.30	197	92.8	(12.7)	30	95
2.85	461		48.5	65	242	4.35	192	91.9	(11.5)	29	93
2.90	444		47.1	63	230	4.40	187	90.7	(10.0)		90
2.95	429		45.7	61	219	4.45	183	90.0	(9.0)	28	89
3.00	415		44.5	59	212	4.50	179	89.0	(8.0)	27	87
3.05	401		43.1	58	202	4.55	174	87.8	(6.4)		85
3.10	388		41.8	56	193	4.60	170	86.8	(5.4)	26	83
3.15	375		40.4	54	184	4.65	167	86.0	(4.4)		81
3.20	363		39.1	52	177	4.70	163	85.0	(3.3)	25	79
3.25	352	(110.0)	37.9	51	171	4.80	156	82.9	(0.9)		76
3.30	341	(109.0)	36.6	50	164	4.90	149	80.8		23	73
3.35	331	(108.5)	35.5	48	159	5.00	143	78.7		22	71
3.40	321	(108.0)	34.3	47	154	5.10	137	76.4		21	67
3.45	311	(107.5)	33.1	46	149	5.20	131	74.0			65
3.50	302	(107.0)	32.1	45	146	5.30	126	72.0		20	63
3.55	293	(106.0)	30.9	43	141	5.40	121	69.8		19	60
3.60	285	(105.5)	29.9		138	5.50	116	67.6		18	58
3.65	277	(104.5)	28.8	41	134	5.60	111	65.7		15	56
3.70	269	(104.0)	27.6	40	130						

This is a condensation of Table 2, Report J417a, SAE 1968 Handbook.

Values in () are beyond normal range, and are presented for information only.

*Values above 500 are for Tungsten carbide ball, below 500 for standard ball.

UNS – UNIFIED NUMBERING SYSTEM

UNS is a system of letters and numbers used to identify grades of steel and aluminum. UNS was established in accordance with ASTM-E-527 and SAE-J-1086 specifications entitled “Recommended Practice for Numbering Metals and Alloys.” UNS is not a specification; rather it is a system designed to correlate the metal specifications used by various organizations such as AISI, ASTM and SAE. UNS is a single letter prefix followed by five numbers; some examples are:

UNS-G-10180 is CD-C-1018
UNS-G-10200 is HR-M-1020
UNS-S-30400 is Stnis T304
UNS-S-93003 is Alum 3003-H-14

STANDARD CARBON STEELS
CHEMICAL COMPOSITION LIMITS

Resulpherized and/or Rephosphorized Steels

AISI Number	C	Mn	P	S	SAE Number
1108	0.08-0.13	0.50-0.80	0.040 max	0.08-0.13	1108
1109	0.08-0.13	0.60-0.90	0.040 max	0.08-0.13	1109
1110	0.08-0.13	0.30-0.60	0.040 max	0.08-0.13	1110
Mx-1113	0.08 max.	0.70-1.00	0.70-0.12	0.24-0.33	. . . .
1116	0.14-0.20	1.10-1.40	0.040 max	0.16-0.23	1116
1117	0.14-0.20	1.00-1.30	0.040 max	0.08-0.13	1117
1118	0.14-0.20	1.30-1.60	0.040 max	0.08-0.13	1118
1119	0.14-0.20	1.00-1.30	0.040 max	0.24-0.33	1119
1132	0.27-0.34	1.35-1.65	0.040 max	0.08-0.13	1132
1137	0.32.-0.39	1.35-1.65	0.040 max	0.08-0.13	1137
1139	0.35-0.43	1.35-1.65	0.040 max	0.13-0.20	1139
1140	0.37-0.44	0.70-1.00	0.040 max	0.08-0.13	1140
1141	0.37-0.45	1.35-1.65	0.040 max	0.08-0.13	1141
1144	0.40-0.48	1.35-1.65	0.040 max	0.24-0.33	1144
1145	0.42-0.49	0.70-1.00	0.040 max	0.04-0.07	1145
1146	0.42-0.49	0.70-1.00	0.040 max	0.08-0.13	1146
1151	0.48-0.55	0.70-1.00	0.040 max	0.08-0.13	1151
1211	0.13 max	0.60-0.90	0.07-.012	0.10-0.15	1211
1212	0.13 max	0.70-1.00	0.07-.012	0.16-0.23	1212
1213	0.13 max	0.70-1.00	0.07-.012	0.24-0.33	1213
*12L13	0.13 max	0.70-1.00	0.07-.012	0.24-0.33	12L13
*12L14	0.15 max	0.85-1.15	0.040-0.090	0.26-0.35	12L14
†1215	0.09 max	0.75-1.05	0.040-0.090	0.26-0.35	. . . . .
‡ Stress-proof	0.40-0.48	1.35-1.65	0.040 max.	0.24-0.33	. . . . .
ϕ Fatigue-proof	0.40-0.48	1.35-1.65	0.040 max.	0.24-0.33	. . . . .

* Lead 0.15-0.35 † Nitrogen Treated
‡ Proprietary Grade – Si. 15–.30, Cu. .15, N. .006-.009
ϕ Proprietary Grade – Si. .15-.30, N. .006-.009

Note on Variations: Chemical analyses are subject to standard variations for check analysis shown in the American Iron & Steel Institute's "Steel Products Manual."

High Manganese Carbon Steels

SAE Number	C	Mn	P Max	S Max	Former SAE No.
1513	0.10-0.16	0.10-1.40	0.040	0.050	. . . . .
1518	0.15-0.21	1.10-1.40	0.040	0.050	. . . . .
1522	0.18-0.24	1.10-1.40	0.040	0.050	. . . . .
1524	0.19-0.25	1.35-1.65	0.040	0.050	1024
1525	0.23-0.29	0.80-1.10	0.040	0.050	. . . . .
1526	0.22-0.29	1.10-1.40	0.040	0.050	. . . . .
1527	0.22-0.29	1.20-1.50	0.040	0.050	1027
1536	0.30-0.37	1.20-1.50	0.040	0.050	1036
1541	0.36-0.44	1.35-1.65	0.040	0.050	1041
1547	0.43-0.51	1.35-1.65	0.040	0.050	1047
1548	0.44-0.52	1.10-1.40	0.040	0.050	1048
1551	0.45-0.56	0.85-1.15	0.040	0.050	1051
1552	0.47-0.55	1.20-1.50	0.040	0.050	1052
1561	0.55-0.65	0.75-1.05	0.040	0.050	1061
1566	0.60-0.71	0.85-1.15	0.040	0.050	1066
1572	0.65-0.76	1.00-1.30	0.040	0.050	1072

STANDARD CARBON STEELS
CHEMICAL COMPOSITION LIMITS

AISI Number	C	Mn	P	S	SAE Number
. . . .	0.06 max.	0.35 max.	0.040	0.050	1005
1006	0.08 max.	0.25-0.40	0.040	0.050	1006
1008	0.10 max.	0.30-0.50	0.040	0.050	1008
. . . .	0.15 max.	0.60 max.	0.040	0.050	1009
1010	0.08-0.13	0.30-0.60	0.040	0.050	1010
. . . .	0.08-0.13	0.60-0.90	0.040	0.050	1011
1012	0.10-0.15	0.30-0.60	0.040	0.050	1012
. . . .	0.11-0.16	0.50-0.80	0.040	0.050	1013
1015	0.13-0.18	0.30-0.60	0.040	0.050	1015
1016	0.13-0.18	0.60-0.90	0.040	0.050	1016
1017	0.15-0.20	0.30-0.60	0.040	0.050	1017
1018	0.15-0.20	0.60-0.90	0.040	0.050	1018
1019	0.15-0.20	0.70-1.00	0.040	0.050	1019
1020	0.18-0.23	0.30-0.60	0.040	0.050	1020
M1020	0.17-0.24	0.25-0.60	0.040	0.050	. . . .
1021	0.18-0.23	0.60-0.90	0.040	0.050	1021
1022	0.18-0.23	0.70-1.00	0.040	0.050	1022
1023	0.20-0.25	0.30-0.60	0.040	0.050	1023
1025	0.22-0.28	0.30-0.60	0.040	0.050	1025
1026	0.22-0.28	0.60-0.90	0.040	0.050	1026
. . . .	0.25-0.31	0.60-0.90	0.040	0.050	1029
1030	0.28-0.34	0.60-0.90	0.040	0.050	1030
1035	0.32-0.38	0.60-0.90	0.040	0.050	1035
1037	0.32-0.38	0.70-1.00	0.040	0.050	1037
1038	0.35-0.42	0.60-.090	0.040	0.050	1038
1039	0.37-0.44	0.70-1.00	0.040	0.050	1039
1040	0.37-0.44	0.60-0.90	0.040	0.050	1040
1042	0.40-0.47	0.60-0.90	0.040	0.050	1042
1043	0.40-0.47	0.70-1.00	0.040	0.050	1043
. . . .	0.43-0.50	0.30-0.60	0.040	0.050	1044
M1044	0.40-0.50	0.25-0.60	0.040	0.050	. . . .
1045	0.43-0.50	0.60-0.90	0.040	0.050	1045
1046	0.43-0.50	0.70-1.00	0.040	0.050	1046
1049	0.46-0.53	0.60-0.90	0.040	0.050	1049
1050	0.48-0.55	0.60-0.90	0.040	0.050	1050
. . . .	0.48-0.55	0.70-1.00	0.040	0.050	1053
1055	0.50-0.60	0.60-0.90	0.040	0.050	1055
1060	0.55-0.65	0.60-0.90	0.040	0.050	1060
1064	0.60-0.70	0.50-0.80	0.040	0.050	1064
1065	0.60-0.70	0.60-0.90	0.040	0.050	1065
. . . .	0.65-0.75	0.40-0.70	0.040	0.050	1069
1070	0.65-0.75	0.60-0.90	0.040	0.050	1070
1074	0.70-0.80	0.50-0.80	0.040	0.050	1074
. . . .	0.70-0.80	0.40-0.70	0.040	0.050	1075
1078	0.72-0.85	0.30-0.60	0.040	0.050	1078
1080	0.75-0.88	0.60-0.90	0.040	0.050	1080
1084	0.80-0.93	0.60-0.90	0.040	0.050	1084
. . . .	0.80-0.93	0.70-1.00	0.040	0.050	1085
1086	0.82-0.95	0.30-0.50	0.040	0.050	1086
1090	0.85-0.98	0.60-0.90	0.040	0.050	1090
1095	0.90-1.03	0.30-0.50	0.040	0.050	1095

METRIC SIZES OF STANDARD STEEL SHAPES

SHEETS – thickness

Millimeters	English Decimal Equivalent, Inches	Millimeters	English Decimal Equivalent, Inches	Millimeters	English Decimal Equivalent, Inches
12.0	.4724	3.4	.1339	1.1	.0433
11.0	.4331	3.2	.1260	1.05	.0413
10.0	.3937	3.0	.1181	1.0	.0394
9.0	.3543	2.8	.1102	0.95	.0374
8.0	.3150	2.6	.1024	0.90	.0354
7.5	.2953	2.5	.0984	0.85	.0335
7.0	.2756	2.4	.0945	0.80	.0315
6.5	.2559	2.2	.0866	0.75	.0295
6.0	.2362	2.1	.0827	0.70	.0276
5.5	.2165	2.0	.0787	0.65	.0256
5.0	.1969	1.9	.0748	0.60	.0236
4.8	.1890	1.8	.0709	0.55	.0217
4.5	.1772	1.7	.0669	0.50	.0197
4.2	.1654	1.6	.0630	0.45	.0177
4.0	.1575	1.5	.0591	0.40	.0157
3.8	.1496	1.4	.0551	0.35	.0138
3.6	.1417	1.3	.0512		
3.5	.1378	1.2	.0472		

PLATES – thickness

Millimeters	English Decimal Equivalent, Inches	Millimeters	English Decimal Equivalent, Inches	Millimeters	English Decimal Equivalent, Inches
5	.1969	20	.7874	60	2.3622
5.5	.2165	22	.8661	70	2.7559
6	.2362	25	.9843	80	3.1496
7	.2756	28	1.1024	90	3.5433
8	.3150	30	1.1811	100	3.9370
9	.3543	32	1.2598	110	4.3307
10	.3937	35	1.3780	120	4.7244
11	.4331	38	1.4961	130	5.1181
12	.4724	40	1.5748	140	5.5118
14	.5512	45	1.7717	150	5.9055
16	.6299	50	1.9685	160	6.2992
18	.7087	55	2.1654		

BARS – thickness

Millimeters	Inches	Millimeters	Inches	Millimeters	Inches
6	.236	24	.945	48	1.890
7	.276	25	.984	50	1.969
8	.315	26	1.024	55	2.165
10	.394	27	1.063	60	2.362
12	.472	28	1.102	65	2.559
13	.512	30	1.181	70	2.756
14	.551	32	1.260	75	2.953
15	.591	34	1.339	80	3.150
16	.630	35	1.378	100	3.937
17	.669	36	1.417	120	4.724
18	.709	38	1.496	140	5.512
19	.748	40	1.575	160	6.299
20	.787	42	1.654	180	7.087
21	.827	44	1.732	200	7.874
22	.866	45	1.772		
23	.906	46	1.811		

METRIC DATA

LENGTH – Basic unit is meter (m)

Metric Unit	Meters	Inches	Feet	Yards	Miles
Millimeter (mm)	.001	—	—	—	—
Centimeter (cm)	.01	.3937	—	—	—
Decimeter (dm)	.1	3.937	.3281	.1094	—
Meter (m)	1	39.37	3.281	1.094	—
Decameter (dkm)	10	393.7	32.81	10.94	—
Hectometer (hm)	100	3937	328.1	109.4	—
Kilometer (km)	1000	—	3281	1094	.6214

To Convert

In. to Millimeters–multiply by 25.4
Millimeters to In.–multiply by .03937
Feet to Meters–multiply by .3048
Meters to Feet–multiply by 3.281
Yards to Meters–multiply by .9144
Meters to Yards–multiply by 1.094
Miles to Kilometers–multiply by 1.609
Kilometers to Miles–multiply by .6214

AREA – Basic unit is centare (ca) which is 1 square meter

Metric Unit	Centares	Square Inches	Square Feet	Square Yards	Acres
Sq. Millimeter (sq. mm)	.000001	—	—	—	—
Sq, Centimeter (sq. cm)	.0001	.1550	—	—	—
Sq. Decimeter (sq. dm)	.01	15.50	.1076	—	—
Centare/Sq. Meter (ca/sq m)	1	1550	10.76	1.196	—
Are (a)	100	—	1076	119.6	—
Hectare (ha)	10,000	—	—	—	2.471
Sq. Kilometere (sq. km)	1,000,000	—	—	—	247.1

To Convert

Sq. In. to Sq. cm–multiply by 6.452
Sq. cm to Sq. In.–multiply by .1550
Sq Ft. Sq. m.–multiply by .0929
Sq. m. to Sq. Ft.–multiply by 10.76
Sq. Yds. to Sq. m.–multiply by .8361
Sq. m. to Sq. Yds.–multiply by 1.196
Acres to Hectares–multiply by .4047
Hectares to Acres–multiply by 2.471
Acres to Sq. km.–multiply by .004047
Sq km. to Acres–multiply by 247.1
Sq Miles to Sq. km.–multiply by 2.590
Sq. km. to Sq.Miles–multiply by .3861

VOLUME – Basic unit is stere (s) which is 1 cubic meter

Metric Unit	Steres	Cubic Inch	Cubic Foot	Cubic Yards
Cu Millimeter (cu mm)	.000000001	—	—	—
Cu Centimeter (cu cm)	.000001	.06102	—	—
Cu Decimeter (cu dm)	.001	61.023	—	—
Desistere (ds)	.1	6102.3	3.351	.1308
Stere/Cu Meter (s/cu m)	1	61023	35.31	1.308
Decastere (dks)	10	—	353.1	13.08

To Convert

Cu. In. to Cu mm–multiply by 1639
Cu. In. Cu.–multiply by .000061
Cu. In. to Cu cm–multiply by 16.39
Cu cm to Cu In.–multiply by .06102
Cu. ft. to Cu. m–multiply by .0283
Cu. m to Cu. Ft.–,ultiply by 35.31
Cu. Yds. to Cu. m–multiply by .7646
Cu. m to Cu. Yds. –mutiply by 1.308

WEIGHT – Basic unit is gram (g)

Metric Unit	Grams	Grains	Ounces	Pounds
Milligram (mg)	.001	0.1543	—	—
Centigram (cg)	.01	.1543	—	—
Decigram (dg)	.1	1.543	—	—
Gram	1	15.43	0.3527	—
Decagram (dkg)	10	154.3	.3527	—
Hectogram (hg)	100	1543	3.527	.22046
Kilogram (kg)	1000	—	35.27	2.2046
Quintal (q)	100,000	—	3527	220.46
Metric Ton (MT)	1,000,000	—	—	2204.6

To Convert

Grains to Centigrams–multiply by 6.48
Centigrams to Grains–multiply by .1543
Ounces to Grams–multiply by – 28.35
Grams to Ounces–multiply by .03527
Pounds to Kilograms–multiply by .4536
Kilograms to Pounds–multiply by 2.2046
Tons (2000#) to Metric Tons–multiply by .9078
Metric Tons to Tons (2000#)–multiply by 1.1023

METRIC DATA

CAPACITY – Basic unit is liter (l)

Metric Unit	Liters	Liquid Capacity Cu. In.	Liquid Capacity Cu. Ft.	Liquid Capacity Fl. Ozs.	Liquid Capacity Pints	Liquid Capacity Quarts	Liquid Capacity Gallons
Milliliter (ml)	.001	.06102	—	.0333382	—	—	—
Centiliter (cl)	.01	.61023	—	.33815	—	—	—
Deciliter (dl)	.1	6.1023	—	3.3815	.2113	.1057	—
Liter (l)	1	61.023	.0353	33.815	2.113	1.057	.264
Decaliter (dkl)	10	610.23	.3531	338.15	21.13	10.57	2.64
Hectoliter (hl)	100	6102.3	3.531	3381.5	211.3	105.7	26.4
Kiloliter (kl)	1000	61023	35.31	33815	2113	1057	264.

To Convert

Cu. In. to Centiliter – multiply by 1.639
Centiliter to Cu. In. – multiply by .61023
Cu. Ft. to Liter – multiply by 28.32
Liter to Cu. Ft. – multiply by .0353
Fl. oz. to Centiliter – multiply by 2.957
Centiliter to Fl. Oz. – multiply by .33815

Pints to Liters – multiply by .4732
Liters to Pints – multiply by 2.113
Quarts to Liters – multiply by .9463
Liters to Quarts – multiply by 1.057
Gallons to Liters – multiply by 3.785
Liters to Gallons – multiply by .2642

FORCE/STRESS – Basic unit is pascal (Pa) commonly expressed in mega pascals (MPa)
Note – 1,000,000 Pa = 1 MPa

1 pascal = newton per square metre
1 pound force (lbf) = 4.448222 newton (N)
1 pound force per square foot (lbf/ft^2) = 47.88026 pascal (Pa)
1 kilogram force (kgf) = 9.806650 newton (N)
1 pound per square ince (psi) = .006894757 mega pascals (MPa)

To Convert

psi to MPa	multiply by	.006894757
ksi to MPa	multiply by	6.894757
MPa to psi	multiply by	145.0377
MPa to ksi	multiply by	.1450377
lbf/in^2 to MPA	multiply by	.006894757
MPa to lbf/in^2	multiply by	145.0377
kgf/mm^2 to MPa	multiply by	9.806650
MPa to kgf/mm^2	multiply by	.1019716
N/mm^2 to MPa	multiply by	.1019716
MPa to N/mm^2	multiply by	1.000000
		1.000000

PREFIXES

Micro-one millionth
Deca-10 times

Myria-10,000 times
Mega-1,000,000 times

AVERAGE MECHANICAL PROPERTIES OF STANDARD STEELS

These figures show the APPROXIMATE ranges of physical properties of steels in common use in 1" Rounds. Lower range tensile properties are to be expected in large sections, while high properties may apply to smaller sections.

They are NOT GUARANTEED and are given only as an indication of what may be expected and should under no circumstances be used in specifying the raw materials. It must not be assumed that these will be obtained in all cases, as they vary widely with permissible variations in analysis, size of section, rolling conditions, grain size and methods of heat treatment.

Dependable physical properties can only be obtained through carefully controlled heat treatment. These figures cannot be used as a basis of acceptance of rejection of material.

AISI or SAE Number	Condition of Steel	Tensile Strength PSI	Yield PSI	%E long. in 2"	% Red of Area	Hardness Brinell	Hardness Rockwell	Machinability % of CD-1112
CARBON GRADES								
1010	HOT ROLLED	50/60,000	30/40,000	30/40	55/65	115 Avg.	648Avg.	50
	COLD DRAWN	65/75,000	50/60,000	20/30	50/60	147 Ave.	79B Avg.	55
12L14	COLD DRAWN	70/85,000	60/75,000	12/18	40/50	150/180	80/90B	185
1215	COLD DRAWN	70/85,000	60/75,000	10/15	40/50	150/180	80/90B	136
12L14 PLUS TELLURIUM	COLD DRAWN	70/85,000	60/75,000	12/18	40/50	150/180	90/90B	295
*1018	HOT ROLLED	55/70,000	35/50,000	30/40	55/65	120/140	67/80B	55
	COLD DRAWN	70/85,000	60/75,000	18/25	45/55	150/180	80/90B	65
	Carburized at 1700° F., Furnace Cooled, Reheated to 1425° F., Quenched in Water. Tempered at 350° F.							
	CORE	90,000	55,000	26	55	185	90B	
1020	HOT ROLLED	55/70,000	35/50,000	30/40	55/65	120/140	67/80B	50
*1117	HOT ROLLED	65/75,000	40/50,000	25/35	55/65	135/155	74/82B	80
	COLD DRAWN	80/90,000	65/80,000	15/20	45/55	150/190	80/90B	90
	Carburized at 1700° F., Furnace Cooled, Reheated to 1425° F., Quenched in Water. Tempered at 350° F.							
	CORE	95,000	58,000	24	53	195	92B	
1045	HOT ROLLED	90/105,000	55/65,000	15/25	35/45	190/220	90/98B	55
	COLD DRAWN	90/110,000	75/90,000	12/20	30/45	195/230	90/99B	58
	Water Quenched From 1550~ F., Tempered at 1000° F.	120,000	92,000	20	55	255	25C	

*With the addition of .15/.35% Lead to this grade, mechanical properties are not appreciably affected. Machinability, however, is improved approx. 25%.

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AVERAGE MECHANICAL PROPERTIES OF STANDARD STEELS

(continued from preceding page)

AISI or SAE Number	Condition of Steel	Tensile Strength PSI	Yield PSI	%E long. in 2"	% Red of Area	Hardness Brinell	Hardness Rockwell	Machinability % of CD-1112
*1141	HOT ROLLED	90/110,000	55/70,000	15/25	30/45	190/220	90/99B	63
	COLD DRAWN	100/120,000	85/105,000	8/18	25/35	200/250	93B/24C	70
	Oil Quenched From 1550° F., Tempered at 1000° F.	120,000	90,000	20	50	250	24	
		100/120,000	90/110,000	7/17	20/35	210/250	17/24	
1144	COLD DRAWN							
	Oil Quenched From 1550° Tempered at 1000°	122,000	92,000	19	50	250	24	85
STRESSPROOF®	COLD DRAWN STRESS RELIEVED	125,000	(Min.) 100,000	12	32	235/285	22/30	83
FATIGUEPROOF®	ELEVATED TEMPERATURE. DRAWN	(Min.) 140,000	(Min.) 125,000	5/15	15/30	280	30–MIN.	80
1050	HOT ROLLED	95/110/000	55/70,000	15/25	25/40	200/235	93/99B	50
	COLD DRAWN	90/110,000	75/90,000	10/20	25/40	195/250	90/100B	51
	Water Quenched From 1525° F., Tempered at 1000° F.	125,000	95,000	20	55	265	27C	
1095	HOT ROLLED	130/150,000	75/95,000	7/17	10/25	260/300	26/32C	
	HOT ROLLED ANNEALED	90/110,000	55/65,000	15/25	35/45	190/220	90/99B	42
	Water Quenched From 1450° Tempered at 1000° F.	170,000	110,000	14	38	290	36C	
ALLOY GRADES 4149-4142	HOT ROLLED ANNEALED	90/100,000	60/70,000	20/30	50/60	185/210	90/95B	55

*With the addition of .15/.35% Lead to these alloys, mechanical properties are not appreciably affected. Machinability, however, is improved approx. 25%.

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AVERAGE MECHANICAL PROPERTIES OF STANDARD STEELS

(continued from preceding page)

AISI or SAE Number	Condition of Steel	Tensile Strength PSI	Yield PSI	%E long. in 2"	% Red of Area	Hardness Brinell	Hardness Rockwell	Machinability % of CD-1112
4340	HOT ROLLED ANNEALED	100/120,000	65/85,000	20/30	45/55	210/250	16/25C	45
	2" Rd. Oil Quenched From 1550° F., Tempered at 1000°	175/190,000	155/170,000	12/18	48/55	370/400	38/42C	
	3" Rd. Oil Quenched From 1550° F., Tempered at 1000°	170/180,000	140/155,000	12/20	45/50	350/375	36/39C	
	4" Rd. Oil Quenched From 1550° F., Tempered at 1000°	160/170,000	135/145,000	12/20	40/50	330/360	35/38C	
	5" Rd. Oil Quenched From 1550° F., Tempered at 1000°	145/160,000	125/135,000	10/15	40/50	300/330	31/36C	
	6" Rd. Oil Quenched From 1550° F., Tempered at 1000°	140/150,000	120/130,000	10/15	40/50	240/320	30/35C	
*8620	HOT ROLLED	80//95,000	60/70/000	18/25	55/65	165/200	85/93B	55
	COLD DRAWN	95/105,000	80/90,000	15/25	50/60	200/220	93/97B	60
	1" Rd. Carburized 1700° F., Box Cooled Reheated to 1550° F. and Oil Quenched Tempered at 300° F. CORE	125/150,000	100/120,000	15/20	45/55	250/300	24/32C	

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AVERAGE MECHANICAL PROPERTIES OF STANDARD STEELS

(continued from preceding page)

AISI or SAE Number	Condition of Steel	Tensile Strength PSI	Yield PSI	%E long. in 2"	% Red of Area	Hardness Brinell	Hardness Rockwell	Machinability % of CD-1112
	COLD DRAWN ANNEALED	105/120,000	85/95,000	15/25	45/55	230/250	20/25C	65
	COLD DRAWN HEAT TREATED	140/155,000	125/140,000	12/20	45/55	270/300	28/32C	50
	1" Rd. Oil Quenched From 1550° F., Tempered at 1000°	150/160,000	130/140,000	15/20	45/55	300/350	32/37C	
	2" Rd. Oil Quenched From 1550° F., Tempered at 1000°	145/155,000	125/135,000	15/20	50/60	300/350	32/37C	
	3" Rd. Oil Quenched From 1550° F., Tempered at 1000°	130/145,000	115/125,000	15/20	50/60	280/310	28/32C	
	HOT ROLLED							
*4147-4150	ANNEALED	90/110,000	65/75,000	20/30	45/55	185/215	90/96B	52
	1" Rd. Oil Quenched From 1550° F., Tempered at 1000°	165/180,000	140/155,000	15/20	45/55	340/375	37/40C	
	2" Rd. Oil Quenched From 1550° F., Tempered at 1000°	160/170,000	135/150,000	15/20	45/55	330/350	36/38C	
	3" Rd. Oil Quenched From 1550° F., Tempered at 1000°	150/160,000	130/140,000	15/20	50/60	310/330	34/36C	
	4" Rd. Oil Quenched From 1550° F., Tempered at 1000°	140/155,000	120/130,000	15/20	50/60	290/315	31/34C	
ETD 150®	ELEVATED TEMPERATURE DRAWN	(Min.) 150,000	(Min.) 130,000	10/30	35/45	302-Min.	32C -Min.	75

*With the addition of .15/.35% Lead to this grade, mechanical properties are not appreciably affected. Machinability, however, is improved approx. 25%.

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AVERAGE MECHANICAL PROPERTIES OF STANDARD STEELS

(continued from preceding page)

AISI Number	SAE Number	Condition of Bar Steel	Tensile Strength PSI	Yield PSI	%E long. in 2"	% Red of Area	Hardness Brinell	Hardness Rockwell	Machinability % of CD-1112
STAINLESS									
Type 304	30304	Annealed Bars	80/90,000	30/40,000	55/65	65/75	150/180	80/90B	45
Type 304	30304	C. R. Sheets	80/90,000	30/40,000	55/65	65/75	.....	80/90B	.....
Type 303	3030F	Annealed Bars	85/95,000	30/40,000	45/55	50/60	160/180	83/89B	70/80
		Annealed C. D. Bars	90/110,000	50/70,000	35/45	45/55	160/255	83/100B	.....
Type 316	30316	Annealed Bars	75/90,000	30/40,000	40/50	60/70	150/180	80/90B	45
		C. R. Sheets	80/90,000	25/40,000	55/65	65/75	.....	80/90B	.....
Type 321	30321	Annealed Bars	80/90,000	30/40,000	50/60	60/70	140/165	75/85B	45
		Annealed C. D. Bars	85/110,000	50/70,000	35/45	45/55	163/255	85/100B	45
		C. R. Sheets	80/100,000	30/40,000	50/60	60/70	.....	75/85B	.....
Type 410	51410	Annealed Bars	70/100,000	35/45,000	30/40	50/60	150/200	80/90B	55
Type 416	51416	Annealed Bars	80/100,000	55/65,000	15/25	40/50	190/220	90/95B	90
		Heat Treated Bars	135/155,000	110/130,000	10/15	38/45	260/320	24/34C	.....
Type 430	51430	C. R. Sheets	65/75,000	40/50,000	20/30	....	.....	80/90B	.....
Type 440F-Se	51440F-Se	Annealed Bars	100/120,000	60/70,000	10/15	20/30	200/260	14/25C	48
17-4 PH		Bars Cond. A	150/000	110,000	6/15	30/60	.....	.....	.....
		Cond. H 900	200,000	185,000	14	50	420	44C	.....
		Cond. H 1025	170,000	165,000	15	56	352	38C	.....

CARBON STEEL COLOR CODES

CARBON STEEL PLATES

.12 max	None	A36	Brown
.33 max carbon	White	A36 Fine Grain	Brown & Green W/White Stripe
Production Plate	White		
8620	Green & Orange	A242	Blue
AR 225	Red & Blue	A441	Yellow

HOT ROLLED STEEL BARS

1045	Pink	A572 Gr45	Green & Black
1060	Orange	A572 Gr50	Green & Yellow
1095	Purple	A588	Blue & Yellow
Strip	None	M1044	Pink
Galvanized	None	C1095	Purple
M1010	None	A36	None
M1020	None	A441	Yellow

COLD FINISHED STEEL BARS

C1018	Blue	12L14	White
C10L18	Red	C1045	Pink
C1215/B1113	Gold & Orange	Stressproof®	Yellow

STEEL TUBING/PIPE

Standard Sch 40	None	Structural	None
Extra Heavy Sch 80	Green	Reject	White
High Yield	Blue	A500 GrB SQ/Rec Struct Tube	None

STRUCTURALS

A36	None	A572 Gr50	Green & Yellow
A242	Blue	A588	Blue & Yellow
A441	Yellow		

HOT ROLLED SHEETS

CQ	None	A606 Gr50	Blue & Yellow
P & O	Green	A607 Gr50	Green & Yellow
DQSK	Orange	A715 Gr50	Green & Blue
A570 Gr36	Brown W/White Stripe		

COLD ROLLED SHEETS

CQ Class I	Yellow	DQSK	Yellow & Orange
CQ Class II	Blue	Excess Prime	White

GALVANIZED SHEET

CQ	None	Galvannealed	Black
DQSK	Orange	PaintGrip/ZincGrip	Black