

SECTION 4

HR Bars & Reinforcing

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Notes

HR BARS & REINFORCING

General Information on Hot Rolled Carbon Steel Bars

ASTM A36

Chemical Requirements

Thickness or Diameter	C Max	Mn	P Max	S Max	Si Max
All Shapes	.2604	.05	.40
Bars to 3/4" incl.	.2604	.05	.40
Bars over 3/4" to 1 1/2" incl.	.27	.60/.90	.04	.05	.40
Bars over 1 1/2 to 4" incl.	.28	.60/.90	.04	.05	.40
Bars over 4"	.29	.60/.90	.04	.05	.40

Tensile Requirements

	Bars	Shapes
Yield point, min, ksi	36	36
Tensile, ksi	58-80	58-80
Elongation 8 In, min, %	20	20
Elongation 2 In, min, %	23	21

HR BARS & REINFORCING



Hot Rolled Strip

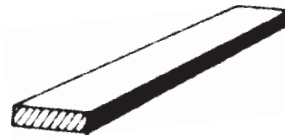
Commercial Quality
Stock Lengths 20 Ft.

Size in Inches	Lbs. Per Ft.	Lbs. Per 20'
1/8 x 1/2	.2125	4.250
x 3/4	.3188	6.376
x 1	.4250	8.500
x 1 1/4	.5313	10.626
x 1 1/2	.6375	12.750
x 2	.8500	17.000
x 2 1/2	1.0630	21.260
x 3	1.2750	25.500
x 4	1.7000	34.000
x 5	2.1250	42.500
x 6	2.5500	51.000
x 8	3.4000	68.000
3/16 x 1/2	.3188	6.376
x 3/4	.4781	9.562
x 1	.6375	12.750
x 1 1/4	.7969	15.938
x 1 1/2	.9563	19.126
x 2	1.2750	25.500
x 2 1/2	1.5940	31.880
x 3	1.9130	38.260
x 4	2.5500	51.000
x 5	3.1880	63.760
x 6	3.8250	76.500
x 7	4.4625	89.250
x 8	5.1000	102.000

HR BARS & REINFORCING

Hot Rolled Flat Bars

ASTM A36, Square Edge
Stock Lengths 20 Ft.



Size in Inches	Lbs. Per Ft.	Lbs. Per 20'
1/4 x 1/2	.4250	8.50
x 3/4	.6375	12.75
x 1	.850	17.00
x 1 1/4	1.063	21.26
x 1 1/2	1.275	25.50
x 1 3/4	1.488	29.76
x 2	1.700	34.00
x 2 1/4	1.913	38.26
x 2 1/2	2.125	42.50
x 3	2.550	51.00
x 3 1/4	2.763	55.26
x 3 1/2	2.975	59.50
x 4	3.400	68.00
x 4 1/2	3.825	76.50
x 5	4.250	85.00
x 5 1/2	4.675	93.50
x 6	5.100	102.00
x 6 1/2	5.525	110.50
x 7	5.950	119.00
x 8	6.800	136.00
x 9	7.660	153.20
x 10	8.510	170.20
x 11	9.360	187.18
x 12	10.210	204.20
5/16 x 1	1.063	21.26
x 1 1/4	1.329	26.58
x 1 1/2	1.594	31.88
x 2	2.125	42.50
x 2 1/2	2.656	53.12
x 3	3.188	63.76
x 4	4.250	85.00
x 4 1/2	4.781	95.62
3/8 x 1/2	.638	12.76
x 3/4	.956	19.13
x 1	1.275	25.50
x 1 1/4	1.594	31.88
x 1 1/2	1.913	38.26
x 1 3/4	2.231	44.62
x 2	2.550	51.00
x 2 1/2	3.188	63.76
x 3	3.825	76.50
x 3 1/2	4.463	89.26
x 4	5.100	102.00
x 4 1/2	5.738	114.76
x 5	6.375	127.50
x 5 1/2	7.013	140.26
x 6	7.650	153.00

HR BARS & REINFORCING

Hot Rolled Flat Bars (con't)

Size in Inches	Lbs. Per Ft.	Lbs. Per 20'
x 6 1/2	8.288	165.76
x 7	8.925	178.50
x 8	10.200	204.00
x 9	11.490	229.80
x 10	12.770	255.40
x 11	14.040	280.80
x 12	15.320	360.40
1/2 x 3/4	1.275	25.50
x 1	1.700	34.00
x 1 1/4	2.125	42.50
x 1 1/2	2.550	51.00
x 1 3/4	2.975	59.50
x 2	3.400	68.00
x 2 1/4	3.825	76.50
x 2 1/2	4.250	85.00
x 3	5.100	102.0
x 3 1/4	5.525	110.5
x 3 1/2	5.950	119.0
x 4	6.800	136.0
x 4 1/2	7.650	153.0
x 5	8.500	170.0
x 5 1/2	9.350	187.0
x 6	10.200	204.0
x 6 1/2	11.050	221.0
x 7	11.900	238.0
x 8	13.600	272.0
x 9	15.320	306.4
x 10	17.020	340.4
x 11	18.720	374.4
x 12	20.420	408.4
5/8 x 1	2.125	42.5
x 1 1/4	2.656	53.1
x 1 1/2	3.188	63.8
x 2	4.250	85.0
x 2 1/2	5.313	106.3
x 3	6.375	127.5
x 3 1/2	7.438	148.8
x 4	8.500	170.0
x 4 1/2	9.563	191.3
x 5	10.630	212.0
x 6	12.750	255.0
x 7	14.880	297.0
x 8	17.000	340.0
x 9	15.320	306.4
x 10	17.020	340.4
x 12	20.420	408.4
3/4 x 1	2.550	51.0
x 1 1/4	3.186	63.7
x 1 1/2	3.825	76.5

HR BARS & REINFORCING

Hot Rolled Flat Bars (con't)

Size in Inches	Lbs. Per Ft.	Lbs. Per 20'
x 1 3/4	4.463	89.3
x 2	5.100	102.0
x 2 1/2	6.375	127.0
x 3	7.650	153.0
x 3 1/2	8.925	178.5
x 4	10.200	204.0
x 4 1/2	11.475	229.5
x 5	12.700	255.0
x 5 1/2	13.975	279.5
x 6	15.300	306.0
x 6 1/2	16.575	331.5
x 7	17.800	357.0
x 8	20.400	408.0
x 9	22.970	459.4
x 10	25.530	510.6
x 11	28.080	561.6
x 12	30.630	612.6
1 x 1 1/4	4.250	85.0
x 1 1/2	5.100	102.0
x 2	6.800	136.0
x 2 1/2	8.500	170.0
x 3	10.200	204.0
x 3 1/2	11.900	238.0
x 4	13.600	272.0
x 4 1/2	15.300	306.0
x 5	17.000	340.0
x 5 1/2	18.700	374.0
x 6	20.400	408.0
x 7	23.800	476.0
x 8	27.200	544.0
x 10	34.030	680.6
x 12	40.840	816.8
1 1/4 x 1 1/2	6.375	127.5
x 2 1/4	9.563	191.3
x 2 1/2	10.625	212.5
1 1/4 x 3	12.750	255.0
x 3 1/2	14.875	297.5
x 4	17.000	340.0
x 4 1/2	19.125	382.5
x 5	21.250	425.0
x 5 1/2	23.375	467.5
x 6	25.500	510.0
x 7	29.750	595.0
x 8	34.000	680.0
1 1/2 x 2	10.200	204.0
x 2 1/2	12.750	255.0
x 3	15.300	306.0
x 3 1/2	17.850	357.0
x 4	20.400	408.0

HR BARS & REINFORCING

Hot Rolled Flat Bars (con't)

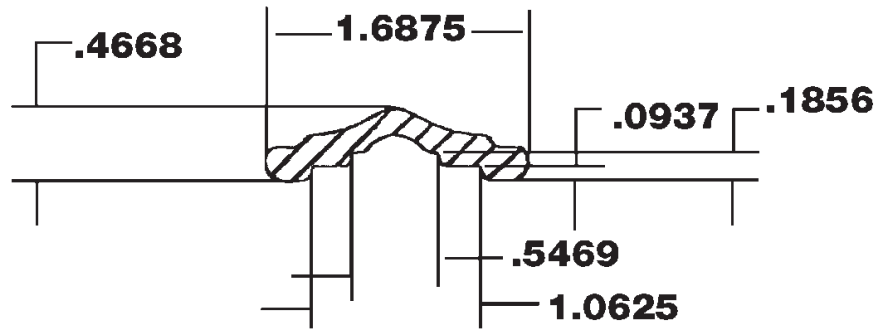
Size in Inches	Lbs. Per Ft.	Lbs. Per 20'
x 4 1/2	22.95	459.0
x 5	25.50	510.0
x 5 1/2	28.05	561.0
x 6	30.60	612.0
x 7	35.70	714.0
x 8	40.80	816.0
1 3/4 x 2	11.90	238.0
x 2 1/2	14.88	297.6
x 3	17.85	357.0
x 3 1/2	20.83	416.6
x 4	23.80	476.0
x 4 1/2	26.78	535.6
x 5	29.75	595.0
x 5 1/2	32.73	654.6
x 6	35.70	714.0
2 x 2 1/2	17.00	340.0
x 3	20.40	408.0
x 3 1/2	23.80	476.0
x 4	27.20	544.0
x 4 1/2	30.60	612.0
x 5	34.00	680.0
x 6	40.80	816.0
2 1/2 x 3	25.55	511.0
x 3 1/2	29.75	595.0
x 4	34.00	680.0
x 4 1/2	38.25	765.0
x 5	42.50	850.0
x 6	51.00	1020.0
3 x 4	40.80	817.6
x 5	51.00	1020.0
x 6	61.20	1224.0

HR BARS & REINFORCING

Top Rail Moulding (Cover Rail)

Stock Lengths 20 Ft.

Size	Lbs. Per Ft.	Lbs. Per 20'
1633L	1.25	24.92

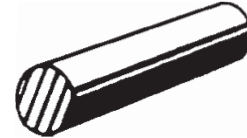


(Designed to Fit Over 1" Bar Channel)

Hot Rolled Rounds

ASTM A36

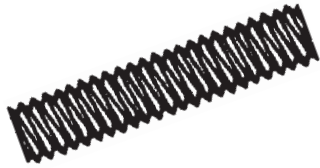
Stock Lengths 20 Ft.



Size in Inches	Lbs. Per Ft.	Lbs. Per 20'
1/4*	.1669	3.338
5/16*	.2608	5.216
3/8*	.3755	7.510
1/2	.6676	13.35
5/8	1.043	20.86
3/4	1.502	30.04
7/8	2.045	40.90
1	2.670	53.40
1 1/8	3.380	67.60
1 1/4	4.173	83.46
1 3/8	5.049	101.0
1 1/2	6.008	120.2
1 3/4	8.178	163.6
1 7/8	9.388	187.8
2	10.60	213.6
2 1/2	16.60	333.8
3	24.03	480.6
4	42.73	854.6

*Stocked as C.Q. only

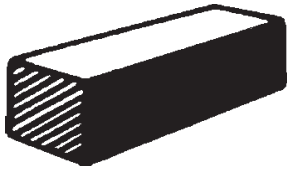
HR BARS & REINFORCING



Threaded Steel Rounds

Low Carbon, Starting Material A36
Roll Threaded-Class 1A Fit
Stock Lengths 6 Ft. and 12 Ft.

Size in Inches	Threads Per Inch	Lbs. Per Ft.	Lbs. Per 6'
1/4	20	.118	.708
5/16	18	.197	1.182
3/8	16	.284	1.704
1/2	13	.515	3.090
5/8	11	.825	4.950
3/4	10	1.215	7.290
7/8	9	1.675	10.050
1	8	2.190	13.140
1 1/8	7	2.750	16.500
1 1/4	7	3.500	21.000



Hot Rolled Squares

ASTM A36
Stock Lengths 20 Ft.

Size in Inches	Lbs. Per Ft.	Lbs. Per 20'
3/8	.4781	9.562
1/2	.8500	17.00
5/8	1.328	26.56
3/4	1.913	38.26
1	3.400	68.00
1 1/4	5.313	106.3
1 1/2	7.650	153.0
2	13.60	272.0
2 1/2	21.25	425.0
3	30.60	612.0
3 1/2	41.65	833.0
4	54.40	1088.0

HR BARS & REINFORCING

Reinforcing Bars (Deformed)

ASTM A615 Grade 40 and Grade 60



Inch Pound Bar Size	Diameter (in.)	Lbs. Per Ft.	Lbs. Per 20'
#3	0.375 (3/8)	.376	7.52
#4	0.500 (1/2)	.668	13.36
#5	0.625 (5/8)	1.043	20.86
#6	0.750 (3/4)	1.502	30.04
#7	0.875 (7/8)	2.044	40.88
#8	1.000 (1)	2.670	53.4
#9	1.128	3.400	68.0
#10	1.270	4.303	86.06
#11	1.410	5.313	106.26
#14	1.693	7.65	153.0
#18	2.257	13.60	272.0

Steel reinforcing bars help maintain integrity of concrete and stops cracking. Small lugs protrude from surface of rebar which inhibit longitudinal movement in surrounding concrete. Deformed billet steel rebars substantially stabilize concrete pouring of any size.

Mechanical Properties	Tensile Strength (PSI)	Yield Strength (PSI)
Grade 40	70,000 Min.	40,000 Min.
Grade 60	90,000 Min.	60,000 Min.