



HSM Wire International, Inc

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Metal Formula Guide

Aluminum		Copper Alloys		Nickel Alloys	
Alloy	lb/cu in	Alloy	lb/cu in	Alloy	lb/cu in
Nom.	0.100	CDA 110	0.323	Nickel	0.322
1100	0.098	CDA 230	0.316	Monel	0.319
2011	0.102	CDA 360	0.308	Inconel	0.307
2024	0.101	CDA 464	0.304	Misc Metals	
3003	0.099	Stainless Steel		Carbon Steel	0.280
5052	0.097	Alloy	lb/cu in	Lead	0.410
6061	0.098	300 series	0.290	Magnesium	0.064
6063	0.097	400 series	0.280	Tin	0.264
7075	0.101	17-4	0.280	Titanium	0.162

Formula for Weight

Sheets	Length x Width x t x w	= lbs per piece
Circles	$0.785 \times D^2 \times t \times w$	= lbs per piece
Rings	$0.785 \times (D + d) \times (D - d) \times t \times w$	= lbs per piece
Round Rods	$D^2 \times 9.42 \times w$	= lbs per foot
Square Bars	$D^2 \times 12 \times w$	= lbs per foot
Rectangular Bars	Thickness x Width x 12 x w	= lbs per foot
Hexagonal Rods	$D^2 \times 10.39 \times w$	= lbs per foot

D = Outside diameter in inches d = inside diameter in inches t = Thickness in inches w = Pounds per cubic inch

Round Tubing	$37.7 \times w \times t \times (D - t)$	= lbs per foot
Square Tubing	$48.0 \times w \times t \times (D - t)$	= lbs per foot

D = Outside diameter (or dimension) in inches t = Wall Thickness in inches w = Pounds per cubic inch

Linear Measure Conversion

1 Inch= 25.4 Millimeters	1 Millimeter= 0.03937 Inches
1 Inch= 2.54 Centimeters	1 Centimeter= 0.3937 Inches
1 Foot= 30.48 Centimeters	1 Meter= 39.37 Inches
1 Yard= 0.9144 Meters	1 Meter= 1.0936 Yards

Weight Conversion

	1 Pound = 0.4536 Kilograms	1 Kilogram = 2.2049 Pounds
1 Short Ton	2,000 Pounds	907.18 Kilograms
1 Long Ton	2,240 Pounds	1,016 Kilograms
1 Metric Ton	2,205 Pounds	1,000 Kilograms

Strength Conversion

To Convert from	To	Multiply By
Pound/sq.inch (psi)	Ksi (1000psi)	0.001
Ksi	Megapascal (MPa)	6.895
Pound/sq.inch (psi)	Megapascal (MPa)	0.006895
Newton/sq mm (N/mm ²)	Megapascal (MPa)	1
Pound/sq.inch (psi)	Newton/Square Millimeter (N/mm ²)	0.006895
Ksi	Newton/Square Millimeter (N/mm ²)	6.895
ksi	Kilogram/Square Millimeter	0.704

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