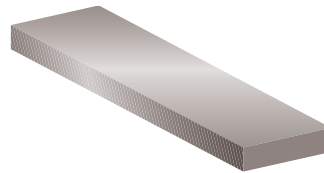


## Tolerance Table For Stainless Steel Round Bar

DIAMETER		TOLERANCE TO ISO							
MM	INCH	H8		H9		H10		K12	
		MM	INCH	MM	INCH	MM	INCH	MM	INCH
+3 - 6	0.199 - 0.236	.018	.00071	.03	.00118	.048	.00189	.120	.0047
+6-10	0.237 - 0.394	.022	.00087	.036	.0014	.058	.00228	.0150	.0059
+10-18	0.395 - 0.708	0.27	.0011	.043	.0071	.070	.00276	.180	.0071
+18-30	0.709 - 1.180	.033	.0013	.052	.0020	.084	.00331	.210	.0083
+30-50	1.181 - 1.970	.039	.0015	.062	.0024	.100	.00394	.250	.0098
+50-80	1.971 - 3.150	.046	.0018	.074	.0029	.120	.00472	.300	.0118
+80-120	3.151 - 4.720	.054	.0021	.087	.0034	.140	.00551	.350	.0138
+120-180	4.724 - 7.09	.063	.0025	.100	.0039	.160	.00630	.400	.0158
+180-250	7.10 - 9.84	.072	.0028	.115	.0045	.185	.00728	.460	.0181
+250-250	7.10 - 9.84	.081	.0032	.130	.0051	.210	.00827	.520	.0205



## Tolerances For Stainless Steel Slit, Edge Rolled Flat Bar

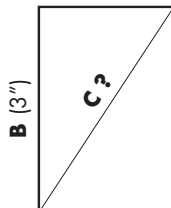
<b>A) LENGTH</b>	+50mm -0
<b>B) WIDTH</b>	+0.5 mm -0.5 mm
<b>C) THICKNESS</b>	+7% -5%
<b>D) STRAIGHTNESS</b>	Widths from 12 mm - <40 = length in mm x 0.004 Widths from 40 mm to 150 mm = length in mm x 0.0025
<b>E) FLATNESS</b>	Widths from 12 mm - <40 = length in mm x 0.01 Widths from 40 mm to 150 mm = length in mm x 0.0075
<b>F) TWIST</b>	Permissible rotation deviation from flatness of <1 x thickness

TOLERANCE INFORMATION ON OTHER PRODUCTS AVAILABLE ON REQUEST - PLEASE RING.

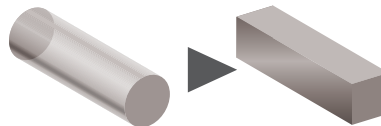
**Question**

The grade of material I want is only available in round bar but my component is square - what size rod do I need?

**Answer** A (2")



**A x A = 4"**  
**B x B = 9"**  
**Total = 13"**  
**Square root 13 = 3.606**  
Therefore **C = 3.606**  
so **3<sup>3</sup>/<sub>4</sub>** dia probably nearest size

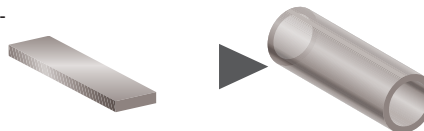


**Question**

I need to roll a ring of 30" dia from a flat bar - what length of bar do I require?

**Answer**

**Diameter x pi (π) i.e. 30 x 3.14159**  
therefore min length required = **94.25"**

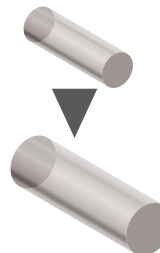


**Question**

Why is it if I double the diameter of an item the price increases 4 fold?

**Answer**

By doubling the diameter you are increasing the area (i.e. quantity of metal) by approximately 4 times i.e.  
**1" dia steel = 3.98 kg per metre**  
**2" dia steel = 15.9 kg per metre**

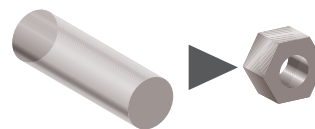


**Question**

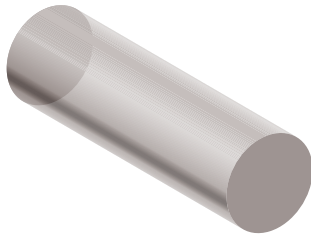
I want to make some hexagonal nuts but the grade of material is only available in round - what size do I need (i.e. what is the dimension across the corners of the hexagon - as opposed to across the flats)?

**Answer**

**Width across flats x 1.1548 = Width across corners**  
So 0.5" across flats = 0.577 across corners  
so 15mm dia rod is probably the closest



# Weight Calculations



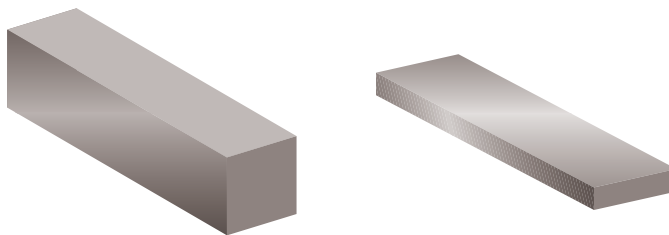
## ROUND BAR

### STEEL/STAINLESS STEEL

Dia (mm) x Dia (mm) x 0,00616 = kgs per metre  
i.e. 1" dia = 25.4 mm x 25.4 mm x 0.00616 = 3.974 kgs per metre

### ALUMINIUM

Dia (mm) x Dia (mm) x 0.00213 = kgs per metre  
i.e. 1" dia = 25.4mm x 25.4mm x 0.00213 = 1.374 kgs per metre



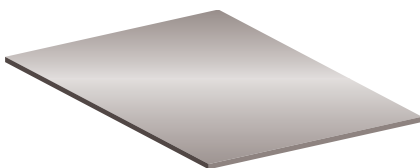
## FLAT AND SQUARE BAR

### STEEL/STAINLESS STEEL

Width (mm) x thickness (mm) x 0.0079 = kgs per metre  
i.e. 50mm x 25mm flat bar = 50 x 25 x 0.0079 = 9.88 kgs per metre

### ALUMINIUM

Width (mm) x thickness (mm) x 0.00271 = kgs per metre  
i.e. 50mm x 25mm flat bar = 50 x 25 x 0.00271 = 3.39 kgs per metre



## SHEET PLATE

### STEEL/STAINLESS STEEL

Length in metres x width in metres x thickness in mm x 8 = kgs per pce  
i.e. 500 mm x 700 mm x 25 mm thick = 0.5m x 0.7m x 25mm x 8 = 70 kgs

### ALUMINIUM

Length in metres x width in metres x thickness in mm x 2.71 = kgs per pce  
i.e. 500 mm x 700 mm x 25mm = 0.5m x 0.7m x 25 mm x 2.71 = 23.7 kgs

Listed here are the relative formulae for calculating the approximate weights of various shapes. Not all grades of the same metal weigh exactly the same owing to their differing chemical composition - so these formulae are only intended to give an approximation. The section/piece weight will also be affected by the manufacturing size tolerance of the item in question.

We have many more formulae for calculation weights of tubes, hexagons and other shapes