

useful formulae

Sheet

To calculate the mass of a sheet:

Alloy	Factor	Calculation
5083	0.982	Length (m) x Width (m) x Thickness (mm) x 2.71 x factor = Kg Example: To calculate mass of 5005 sheet 1800 x 763 x 1.2mm thick $1.8 \times 0.763 \times 1.2 \times 2.71 \times 0.996 = 4.448 \text{ kg}$
5251	0.993	
1150	0.996	
5005	0.996	
1200	1.000	
3105	1.004	
3003	1.007	

Coiled Sheet

Coil density (kg per mm of width) = $2.128 (D + d) (D - d) 10^{-6}$

D = outside diameter of coil (mm)

d = inside diameter of coil (mm)

Circles

Mass per circle = $2.1 \times 10^{-6} D^2 t = \text{kg}$

D = diameter (mm)

t = thickness (mm)

Extrusions

Mass per unit length for Extrusions

Alloy	Density (kg/m ³ x 10 ³)	Conversion Factor
2011	2.77	1.044
3003	2.73	1.007
6060	2.70	0.996
6106	2.70	0.996
6061	2.70	0.996
6082	2.70	0.996

Circles

Mass per metre (kg) = $2.71 \times A \times 10^{-3} \times \text{Factor}$

Tubes

Mass per metre (kg) = $8.51t(D-t) \times 10^{-3} \times \text{Factor}$

Round Bar & Wire

Mass per metre (kg) = $2.13 D^2 \times 10^{-3} \times \text{Factor}$

D = outside diameter (mm)

d = inside diameter (mm)

t = thickness

A = cross section area (mm²)