



COMPONENT SPECIFICATION SHEET:

Aluminum Rail Material-6063-T6 P1

November 21, 2011

Aluminum 6063-T6

Subcategory: 6000 Series Aluminum Alloy; Aluminum Alloy; Metal; Nonferrous Metal

Close Analogs:

Composition Notes:

Aluminum content reported is calculated as remainder.

Composition information provided by the Aluminum Association and is not for design.

Key Words: UNS A96063; ISO AIMg0.5Si; Aluminium 6063-T6; AA6063-T6

Component	Wt. %	Component	Wt. %	Component	Wt. %
Al	Max 97.5	Mg	0.45 - 0.9	Si	0.2 - 0.6
Cr	Max 0.1	Mn	Max 0.1	Ti	Max 0.1
Cu	Max 0.1	Other, each	Max 0.05	Zn	Max 0.1
Fe	Max 0.35	Other, total	Max 0.15		

Material Notes:

Data points with the AA note have been provided by the Aluminum Association, Inc. and are NOT FOR DESIGN.

Physical Properties	Metric	English	Comments
Density	2.7 g/cc	0.0975 lb/in ³	AA; Typical
Mechanical Properties			
Hardness, Brinell	73	73	AA; Typical; 500 g load; 10 mm ball
Hardness, Knoop	96	96	Converted from Brinell Hardness Value
Hardness, Vickers	83	83	Converted from Brinell Hardness Value
Ultimate Tensile Strength	241 MPa	35000 psi	AA; Typical
Tensile Yield Strength	214 MPa	31000 psi	AA; Typical
Elongation at Break	12 %	12 %	AA; Typical; 1/16 in. (1.6 mm) Thickness
Modulus of Elasticity	68.9 GPa	10000 ksi	AA; Typical; Average of tension and compression. Compression modulus is about 2% greater than tensile modulus.
Ultimate Bearing Strength	434 MPa	62900 psi	Edge distance/pin diameter = 2.0
Bearing Yield Strength	276 MPa	40000 psi	Edge distance/pin diameter = 2.0
Poisson's Ratio	0.33	0.33	