

Product Specifications: Alloy AA 6063

Description of Alloy

Alloy 6063 provides a good combination of extrudability and mechanical properties. Its excellent extrudability allows thin-walled hollow shapes, intricate solids, and other shapes that are usually difficult to extrude with satisfactory finish, to be produced more easily. It responds well to polishing, chemical brightening, anodizing, and dyeing.

Characteristics

- i) Welding** Alloy 6063 is readily welded by the MIG and TIG processes. The recommended filler alloy, particularly when welding exposed surfaces that will be anodized for decorative purposes, is 5356. Alloy 4043 may be used in other cases.
- ii) Rivets** Alloy 6053 -- T61
- iii) Machining** Readily machined in all tempers given.
- iv) Forming** All tempers may be formed, the softer tempers accepting more severe forming.
- v) Corrosion** Excellent resistance to the atmosphere. Particularly suitable for anodizing for architectural applications.

Temper Available

Extruded Shaped - T5, T6

Chemical Composition

Alloy 6063 is a heat-treatable aluminium-magnesium-silicon alloy.

Si	Fe	Ti	Mg	Cr	Mn	Cu	Zn	Other (each)	Other (total)	Al
0.20 - 0.60	0.35	0.10	0.45 - 0.90	0.10	0.10	0.10	0.10	0.05	0.15	Remainder

Mechanical Properties

Temper	Thickness (mm)	Tensile Strength (Mpa)		0.2% Proof Stress (Mpa)		Elongation (%)
		Min.	Max.	Min.	Max.	Min.
T5	12 or under	150		110	-	8
	Over 12 up to and including 25	145		105	-	8
T6	3 or under	205		170	-	8
	Over 3 up to and including 25	205		170	-	10

Physical Properties

Density	2.70 g/cm ³
Melting Range	615 - 655°C
Specific Heat between 0 - 100°C	879 J/kg.K
Coefficient of Linear Expansion between 20 - 100°C	23 x 10 ⁻⁶ /K
Thermal Conductivity at 25°C	202 W/m.K
Electrical Resistivity at 20°C	0.033μΩm
Modulus of Elasticity	69 x 10 ³ MPa

Notes:

- (1) These are the most common tempers, others may be available. For further information contact Chip Aik Aluminium office.
- (2) Composition given in percent maximum unless shown as a range.
- (3) The physical properties given are typical values.