

Product Specifications: Alloy AA 6061

Description of Alloy

Alloy 6061 is a well proven medium strength structural alloy that satisfies the requirements of a number of specifications. In extruded shapes, it is treated as an equal alternative to AA 6351 and has a long history in furniture, handrails, transportation, industrial equipment and general structures.

Characteristics

- i) Welding** Alloy 6061 is readily welded by the MIG and TIG processes. The recommended filler alloy is 5356. Alloy 4043 may also be used for general welding except when welding 6061 to aluminium-magnesium alloys.
- 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, fresh waters, many soils. Fair resistance to seawater. Good general corrosion resistance in structural application.

Temper Available

Extruded Shaped - T6

Chemical Composition

Alloy 6061 is a heat-treatable aluminium-magnesium-silicon alloy.

Si	Fe	Ti	Mg	Cr	Mn	Cu	Zn	Other (each)	Other (total)	Al
0.40 - 0.80	0.70	0.15	0.8 - 1.20	0.04 - 0.35	0.15	0.15 - 0.40	0.25	0.05	0.15	Remainder

Mechanical Properties

Temper	Thickness (mm)	Tensile Strength (Mpa)		0.2% Proof Stress (Mpa)		Elongation (%)
		Min.	Max.	Min.	Max.	Min.
T6	6 or under	265		245	-	8
	Over 6	265		245	-	10

Physical Properties

Density	2.70 g/cm ³
Melting Range	580 - 650°C
Specific Heat between 0 - 100°C	920 J/kg.K
Coefficient of Linear Expansion between 20 - 100°C	24 x 10 ⁻⁶ /K
Thermal Conductivity at 25°C	167 W/m.K
Electrical Resistivity at 20°C	0.040μΩm
Modulus of Rigidity	26000 N/mm ²
Modulus of Elasticity	69000 N/mm ²

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.