

Aluminium Alloy 6063
Material Data Sheet
Scope

Aluminium alloy 6063 is a medium strength alloy commonly referred to as an architectural alloy. It is normally used in intricate extrusions. It has a good surface finish, high corrosion resistance, is suited to welding and can be easily anodised. Most commonly available as T6 temper, in the T4 condition it has good formability.

Application

This material is used for architectural applications, shop fittings, irrigation tubing, balustrading, window frames, extrusions and doors.

Supplied Forms

- Extrusions
- Tube

Alloy Designations

Aluminium alloy 6063/6063A also corresponds to: AA6063, Al Mg0.7Si, GS10, AlMgSi0.5, A-GS, 3.32206, ASTM B210, ASTM B221, ASTM B241 (pipe-seamless), ASTM B345 (pipe-seamless), ASTM B361, ASTM B429, ASTM B483, ASTM B491, MIL G-18014, MIL G-18015, MIL P-25995, MIL W-85, QQ A-200/9, SAE J454, UNS A96063 and HE19.

Temper Types

The most common tempers for 6063 aluminium are: O - Soft, T4 - Solution heat treated and naturally aged to a substantially stable condition and T6 - Solution heat treated and artificially aged.

Fabrication

- Solderability: Good
- Weldability - Gas: Excellent
- Weldability - Arc: Excellent
- Weldability - Resistance: Excellent
- Brazability: Excellent
- Workability - Cold: Average
- Machinability: Average

Chemical Composition

Element	% Present
Manganese (Mn)	0.0 - 0.10
Iron (Fe)	0.0 - 0.35
Magnesium (Mg)	0.45 - 0.90
Silicon (Si)	0.20 - 0.60
Zinc (Zn)	0.0 - 0.10
Titanium (Ti)	0.0 - 0.10
Chromium (Cr)	0.0 - 0.10
Copper (Cu)	0.0 - 0.10
Aluminium (Al)	Balance

Mechanical properties at room temperature

Property	Value
Proof Stress	160 MPa
Tensile Strength	195 MPa
Elongation	14 %
Shear Strength	150 MPa
Hardness Vickers	80 HV

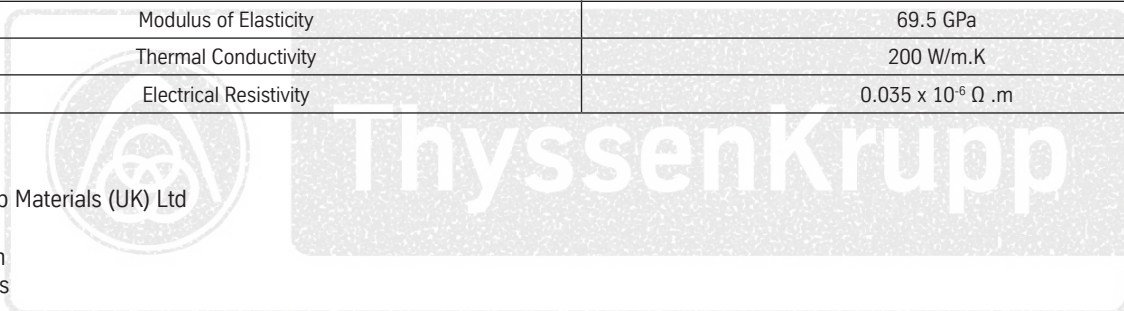
Properties above are for material in the T6 condition.

Reference data for some physical properties (for guidance only)

Property	Value
Density	2.70 Kg/m ³
Melting Point	600 °C
Thermal Expansion	23.5 x 10 ⁻⁶ /K
Modulus of Elasticity	69.5 GPa
Thermal Conductivity	200 W/m.K
Electrical Resistivity	0.035 x 10 ⁻⁶ Ω .m

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Important Note

Information given in this data sheet about the condition or usability of materials respectively products are no warranty for their properties, but act as a description.

The information, we give on for advice, comply to the experiences of the manufacturer as well as our own. We cannot give warranty for the results of processing and application of the products.