



## Aluminium Alloy - L109 T4 Sheet

### SPECIFICATIONS

Commercial	2024 CLAD 1050A
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#### Applications:

High strength fabricated or machined items in aircraft industries, general engineering, machinery, military equipment, truck wheels. Screw machine products. Structural applications. Rivets.

#### Characteristic Properties:

Heat treatable alloy. Very good machining characteristics. High strength alloy with a strength slightly higher than 2014(A) and 2017A and 2030. High fatigue strength. Suitable for welding only by resistance welding. Corrosion resistance only with cladding or other protection.

### CHEMICAL COMPOSITION

BS L109(1971) Alloy L109	
Element	% Present
Copper (Cu)	3.8 - 4.9
Magnesium (Mg)	1.2 - 1.8
Manganese (Mn)	0.3 - 0.9
Iron (Fe)	0.5 max
Silicon (Si)	0.5 max
Zinc (Zn)	0.2 max
Titanium + Zirconium (Ti+Zr)	0.2 max
Chromium (Cr)	0.1 max
Nickel (Ni)	0.05 max
Lead (Pb)	0.05 max
Tin (Sn)	0.05 max
Aluminium (Al)	Balance

#### Heat Treatment:

Material shall be supplied solution treated, straightened and aged at room temperature.

Material shall be heat treated as follows:

1. Solution treat by heating at a temperature of 495 +/- 5C and quenching in water at a temperature not exceeding 40C.
2. Age at room temperature for not less than 48 hours.

### ALLOY DESIGNATIONS

Aluminium alloy L109 - 2024 clad 1050A is covered by standard BS L109 (1971)

### TEMPER TYPES

The most common temper for L109 - 2024 clad 1050A aluminium is:

- T4 - Solution heat treated and naturally aged to a substantially stable condition

### SUPPLIED FORMS

L109 - 2024 CLADd 1050A aluminium is as sheet and strip

- Sheet
- Strip

### GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.79 g/cm <sup>3</sup>
Melting Point	640 °C
Thermal Expansion	23.1 x10 <sup>-6</sup> /K
Modulus of Elasticity	73 GPa
Thermal Conductivity	121-193 W/m.K

### MECHANICAL PROPERTIES

BS L109(1971) Sheet 0.4mm to 0.8mm	
Property	Value
Elongation A50 mm	12 Min %
Tensile Strength	405 Min N/mm <sup>2</sup>
Elongation A	%
0.2% Proof Stress	270 Min N/mm <sup>2</sup>

This specification covers aluminium-coated sheet and strip of aluminium-copper-magnesium-manganese alloy.

The cladding material shall comply with the international designation 1050A.

Mechanical property values relate to material with a nominal thickness of 0.4 up to and including 0.8mm. This specification contains other values for different material thicknesses.



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### CONTACT

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### REVISION HISTORY

Datasheet Updated	09 January 2014
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