Aluminium Alloy
5251 - H22 Sheet and Plate

SPECIFICATIONS

Commercial	5251
EN	5251

Aluminium alloy 5251 is a medium strength alloy possessing good ductility and therefore good formability. Alloy 5251 is known for work hardening rapidly and is readily weldable. It also possesses high corrosion resistance particularly in marine environments.

Applications
5251 is typically used in:
~ Boats
~ Panelling and pressings
~ Marine structures
~ Aircraft parts
~ Vehicle panels
~ Furniture tubing
~ Silos
~ Containers

Mechanical Properties shown are for H22 condition - Mechanical properties for other tempers are shown on page 2.

CHEMICAL COMPOSITION

BS EN573-3:2009
Alloy 5251

Element	% Present
Magnesium (Mg)	1.70 - 2.40
Manganese (Mn)	0.10 - 0.50
Iron (Fe)	0.0 - 0.50
Silicon (Si)	0.0 - 0.40
Titanium (Ti)	0.0 - 0.15
Others (Total)	0.0 - 0.15
Chromium (Cr)	0.0 - 0.15
Copper (Cu)	0.0 - 0.15
Zinc (Zn)	0.0 - 0.15
Other (Each)	0.0 - 0.05
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

Alloy 5251 corresponds to the following standard designations and specifications, ***although may not be a direct equivalent***:
Al Mg2
Al 2.0Mg 0.3Mn

TEMPER TYPES

The most common tempers for 5251 aluminium are:

- H24 - Work hardened by rolling then annealed to half hard
- H26 - Work hardened by rolling then annealed to three-quarter hard
- O - Soft
- H22 - Work hardened by rolling then annealed to quarter hard

SUPPLIED FORMS

- Plate
- Sheet

GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.69 g/cm³
Melting Point	625 °C
Thermal Expansion	25 x10^{-6} /K
Modulus of Elasticity	70 GPa
Thermal Conductivity	134 W/m.K
Electrical Resistivity	0.044 x10^{-6} Ω .m

MECHANICAL PROPERTIES

BS EN 485-2:2008
Sheet and Plate
0.2mm to 25mm

Property	Value
Proof Stress	120 Min MPa
Tensile Strength	190 - 230 MPa
Hardness Brinell	56 HB

Properties above are for material in the H22 condition

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WELDABILITY

Aluminium alloy 5251 is a readily weldable alloy.
The recommended filler wire is 5356 when welding alloy 5251 to itself, 6XXX series alloys, 7XXX series alloys and most other 5XXX alloys.
When welding alloy 5251 to 5005, 5020, 1XXX series or 3XXX series alloys, the recommended filler wire is 4043.

Weldability – Gas: Very Good
Weldability – Arc: Very Good
Weldability – Resistance: Very Good
Brazability: Poor

FABRICATION

Workability – Cold: Very Good
Machinability: Average

CONTACT

Address: Please make contact directly with your local service centre, which can be found via the Locations page of our web site
Web: www.aalco.co.uk

REVISION HISTORY

Datasheet Updated 18 July 2019

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