Aluminium Alloy
5251 - '0' Sheet and Plate

Amari ireland Ltd

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

CHEMICAL COMPOSITION

BS EN 573-3:2009
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
Chromium (Cr)	0.0 - 0.15
Titanium (Ti)	0.0 - 0.15
Zinc (Zn)	0.0 - 0.15
Copper (Cu)	0.0 - 0.15
Others (Total)	0.0 - 0.15
Other (Each)	0.0 - 0.05
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

Alloy 5251 also corresponds to the following standard designations and specifications ***but may not be a direct equivalent***:

Al Mg2
Al 2.0Mg 0.3Mn

TEMPER TYPES

The most common tempers for 5252 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 50.00mm

Property	Value
Proof Stress	60 Min MPa
Tensile Strength	160 - 200 MPa
Hardness Brinell	44 HB

Properties above are for material in the Soft O 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.amari-ireland.com

REVISION HISTORY

Datasheet Updated 18 July 2019

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This Data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon.

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Mechanical Properties

Temper	H22	H24	H26	0
Proof Stress 0.2% (MPa)	165	190	215	80
Tensile Strength (MPa)	210	230	255	180
Shear Strength (MPa)	125	135	145	115
Elongation A5 (%)	14	13	9	26
Hardness Vickers (HV)	65	70	75	46

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