

Aluminium Alloy

5251 - H22 Sheet and Plate

Description

Aluminum alloy 5251 is classified as a medium-strength alloy with notable ductility, which makes it highly suitable for various forming processes. Supplied in Plate and Sheet form, alloy 5251 is characterized by its rapid work hardening ability and is easily weldable. Additionally, it exhibits exceptional corrosion resistance, especially in marine settings.

Applications

- Furniture tubing
- Silos
- Aircraft parts
- Containers
- Panelling and pressings
- Marine structures
- Boats
- Vehicle panels

Fabrication

Workability, Cold: Very Good
Machinability: Average

Designations

Al Mg2, Al 2.0Mg 0.3Mn

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
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

Weldability

Aluminum alloy 5251 is known for its ease of weldability. When welding alloy 5251 to itself, 6XXX series alloys, 7XXX series alloys, and most other 5XXX alloys, it is recommended to use filler wire 5356. On the other hand, 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

Temper Types

The most common tempers for 5251 aluminum include:

- H24: Achieved by work hardening through rolling, followed by annealing to a half-hard state.
- H26: Achieved by work hardening through rolling, followed by annealing to a three-quarter hard state.
- O: Represents the softest temper.
- H22: Achieved by work hardening through rolling, followed by annealing to a quarter-hard state.

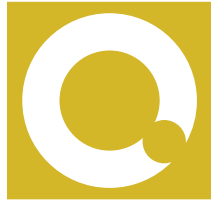
Physical Properties

Property	Value
Density	2.69 g/cm ³
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 & Plate 0.2mm to 25mm

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



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Disclaimer

This data serves as an indicative reference and should not be used as a substitute for the full specification. Mechanical properties can vary significantly depending on the temper, product, and its dimensions. All the information provided is based on our current knowledge and is given in good faith. The company bears no responsibility for any actions taken by third parties based on this information.

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