

Data Sheet

ALUMINIUM - 5251

Grade 5251 is a medium strength non-heat treatable aluminium alloy. With additions of magnesium, iron and manganese the material offers a high corrosion resistance in marine, offshore and industrial environments coupled with a medium strength level.

Grade 5251 is traditionally recognised as a general sheet metal working grade. It is readily weldable and offers higher mechanical properties together with a good formability. However, alloy 5251 is known for work hardening rapidly so care needs to be taken during the forming process.

Key Features:

Very good cold formability

Readily weldable

High marine corrosion resistance

Good aesthetic properties

Very good anodising properties

Related Specifications:

5251	Al Mg2	Al 2.0Mg 0.3Mn
NS4	EN AW 5251	A96082

Chemical Composition:

Aluminium	Rem
Copper	0.15% max
Manganese	0.1 - 0.5%
Zinc	0.15% max
Chromium	0.15% max
Silicon	0.4%
Iron	0.5% max
Magnesium	1.7 - 2.4%
Titanium	0.15% max
Total others	0.15 max

Typical Physical Properties:

Melting Range	595 - 650°C
Density	2.69 g/cm ³
Thermal conductivity	155 W/m ² K
Thermal expansion coefficient (20-200°C)	24 x 10 ⁻⁶ /°C
Electrical conductivity	36.6 % IACS
Modulus of elasticity	70 GPa
Electrical resistivity	0.047 microhm m

Fabrication Properties:

Soldering/ Brazing	Poor
Machinability	Average
Inert gas welding	Very good
Resistance welding	Very Good
Cold formability	Very Good

Typical Uses:

Grade 5251 has typically been used in boats, panelling and pressings, offshore marine structures aircraft parts, vehicle panels, furniture tubing, silos, containers.