

# ALUMINIUM ALLOY: 5251 H22

## TECHNICAL DATA SHEET

### DESCRIPTION:

Aluminium Alloy 5251 is a medium strength alloy possessing good ductility and good formability. It is known for work hardening rapidly and is readily weldable. It also possesses high corrosion resistance particularly in marine environments. Alloy 5251 is specifically used within the manufacture of JWD's substructure components.

### 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

### ALLOY DESIGNATIONS:

Aluminium 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:

Our standard temper is H22 (work hardened by rolling then annealed to quarter hard).

### PHYSICAL PROPERTIES:

Property	Value
Density	2.69 g/cm <sup>3</sup>
Melting Point	625°C
Thermal Expansion	25 x 10 <sup>-6</sup> /K
Modulus of Elasticity	70 GPa
Thermal Conductivity	134 W/m.K
Electrical Resistivity	0.044 x10 <sup>-6</sup> Ω .m

### MECHANICAL PROPERTIES:

BS EN 485-2:2008 - Sheet 0.2mm - 6.00mm

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

### ADDITIONAL PROPERTIES:

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.

Workability - Cold: Very Good Weldability: Excellent