HOLME DODSWORTH METALS LIMITED
www.holmedodsworth.com

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 cold formability. However, Alloy 5251 is known for work hardening rapidly so care needs to be taken during the forming process.

**Chemical Composition**

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

**Related Specifications**

| | | |
|---|---|---|
| 5251 | Al Mg2 | Al 2.0Mg 0.3Mn |
| NS4 | EN AW 5251 | |

**Key Features**

- Very good cold formability
- Readily weldable
- High marine corrosion resistance
- Good aesthetic properties
- Very good anodising properties

**Typical Physical Properties**

| | |
|---|---|
| Melting Range | 595-650°C |
| Density | 2.69 g/cm³ |
| Thermal conductivity | 155 W/m°K |
| Thermal expansion coefficient | 24 x $10^{-6}$ |
| Electrical Conductivity | 36.7 IACS |
| Electrical resistivity | 0.047 microhm m |
| Modulus of elasticity | 70 GPa |

**Fabrication Properties**

| | |
|---|---|
| Cold Formability | Very Good |
| Machinability | Average |
| Brazing and Soldering | Poor |
| Inert Gas Welding | Very Good |
| Resistance Welding | Very Good |

**Typical Applications**

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

This technical information is given by Holme Dodsworth Metals without charge and the user shall employ such information at their own discretion and risk. For more detailed technical advice on temper selection, fabrication, joining, machining, physical and mechanical data please contact us as space does not permit the listing of every feature of the material.