

Aluminium alloy

5083

Al Mg4, 5Mn0,7

SPECIFICATIONS

European Standards:

- EN AW-5083 (Al Mg4, 5Mn0,7)

UNS : A95083

COMPOSITION

Magnesium.....	4.40
Manganese.....	0.70
Chromium.....	0.15
Aluminum.....	Base

TYPICAL MECHANICAL PROPERTIES

- H116 condition (as defined in Standard NF EN 515).

Thickness 50mm

-Tensile test at ambient temperature, longitudinal direction

- UTS: >285 N/mm²
- 0.2 % Yield strength: >200 N/mm²
- Elongation (5d): >12 %

-Tensile test at -196°C, longitudinal direction

- UTS: 1.4 x UTS at ambient temperature
- 0.2 % Yield strength: 1.5 x YS at ambient temperature

APPLICATIONS

- Alloy suitable for applications in the following areas:

- marine applications
- automotive industry
- aerospace industry
- nuclear industry
- defence (armour-plate, missiles)

This alloy is also used in cryogenic applications.

CHARACTERISTICS

- Weldable alloy with intermediate mechanical strength and good corrosion resistance. Good properties at low temperature down to -196°C.

HEAT TREATMENT

- Annealing temperature: 415°C

PHYSICAL PROPERTIES

- Density: 2.66
- Mean coefficient of expansion in m/m.°C:
 - between (-50°C) and 20°C: 22.3×10^{-6}
 - between 20°C and 100°C: 24.2×10^{-6}
 - between 20°C and 200°C: 25.0×10^{-6}
 - between 20°C and 300°C: 26.0×10^{-6}
- Thermal conductivity in W.m/m².°C:
 - at 20°C: 120
- Mean specific heat in J/g°C:
 - at 20°C: 0.9
- Electrical resistivity in $\mu\Omega.cm^2/cm$
 - at 20°C: 5.95
- Average electrical conductivity in S/m:
 - at 20°C: 16.8×10^6

Contact:

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The data provided in this document represent typical or average values rather than maximum or minimum guaranteed values. The applications indicated for the grades described are given as guidance only in order to help the reader in his personal assessment. Please note that these do not constitute a guarantee whether implicit or explicit as to whether the grade selected is suited to specific requirements. Aubert & Duval's liability shall not under any circumstances extend to product selection or to the consequences of that selection.