

Aluminium 5083 / 3.3547 / Al-Mg4.5Mn

Alternative Designations

EN AW-5083 | Al-Mg4,5Mn (ISO) | AA5083 (ANSI/AA) | N8 (BS) | A-G4,5MC (AFNOR) | L-3321 (UNE) | A95083 (UNS) | A5083 (JIS) | GM4I(D54S) (CSA) | 4140 (SIS)

Key Features

Moderate strength • Good machinability • Corrosion resistant • Excellent weldability

Description

Aluminium 5083 is a medium-strength alloy with excellent corrosion resistance. It has the highest strength of the non-heat treatable alloys but is not recommended for use in temperatures above 65°C. It is also commonly used in sheet metal fabrications such as HVAC ductwork, kitchen equipment, and light fittings. It has good resistance to corrosion with good machinability. It can be welded using all standard methods but is not recommended for welding in the heat-affected zone of high-strength alloys.

Mechanical Properties

Yield strength	115 – 200 MPa
Tensile strength	270 – 345 MPa
Elongation at break	16%
Hardness	81.5
Module of elasticity	71 GPa

Physical Properties

Density	2.66 g/cm ³
Electrical conductivity	16 – 19 m/Ω · mm ²
Coefficient of thermal expansion	23.8 K ⁻¹ · 10 ⁻⁶
Thermal conductivity	117 W/m · K
Specific heat capacity	900 J/kg · K

Chemical Composition

Al	Rest is Al	N	-
Bi	-	Nb	-
C	-	Ni	-
Cd	-	O	-
Co	-	P	-
Cr	0.05 – 0.25%	Pb	-
Cu	0.1%	S	-
Fe	0.4%	Si	0.4%
H	-	Sn	-
Mg	4 – 4.9%	Ti	0.15%
Mn	0.4 – 1%	V	-
Mo	-	Zn	0.25%

Reference

Datasheets provided by Xometry contain materials sourced through trusted OEMs, material distributors, and databases. Please visit Materialdatacenter.com for further information on this material.