

5083 Aluminium

Technical Datasheet



Commercial Aluminium Alloy

Service. Quality. Value.

Applications

- Pressure vessels
- Rail cars
- Shipbuilding
- Vehicle bodies
- Tipper truck bodies
- Mine skips & cages

Product Description

5083 aluminium alloy is well known for its exceptional performance in the most extreme environments. The alloy displays high resistance to both seawater and industrial chemical environments and has the highest strength of all the non-heat treatable alloys although it is not recommended for use in temperatures above 65°C.

Availability

Plate, Sheet

Key features:

- Highly resistant to seawater and industrial chemical attack
- Exceptional performance in extreme environments
- Highest strength of all non-heat treatable alloys
- Not recommended for use in temperatures which exceed 65°C

Related Material Specifications

- GM41
- A95083
- AlMg 4.5 Mn
- Al Mg 4.5 Mn 0.7.

Weldability

5083 retains exceptional strength after welding

Corrosion Resistance

Highly resistant to both seawater and industrial chemical attack.

Chemical Composition (weight %)

Weight (%)	Mn	Fe	Cu	Mg	Si	Zn	Cr	Ti	Al
min	0.40			4.00			0.05	0.15	Bal
max.	1.00	0.40	0.10	4.90	0.40	0.25	0.25	0.15	Bal

Mechanical Properties

Tensile Strength	300 MPa
Elongation A50 mm	23%
Shear Strength	175 MPa
Hardness Vickers	75 HV
Proof Stress	145 MPa

Physical Properties

Density	2.65 g/cm ³
Melting Point	570°C
Thermal Expansion	25 x10 ⁻⁶ /K
Modulus of Elasticity	72 GPa
Thermal Conductivity	121 W/m.K

The properties above are for material in the Soft O/H111 condition

Technical Assistance

Our knowledgeable staff backed up by our resident team of qualified metallurgists and engineers, will be pleased to assist further on any technical topic.

UK Service Centres

Smiths Belfast	02895 908 897
Smiths Biggleswade	01767 604 704
Smiths Birmingham	0121 728 4940
Smiths Bristol	0117 971 2800
Smiths Chelmsford	01245 466 664
Smiths Gateshead	0191 469 5428
Smiths Horsham	01403 261 981

Quality & Testing

Smiths Leeds	0113 307 5167
Smiths Manchester	0161 794 8650
Smiths Norwich	01603 789 878
Smiths Nottingham	0115 925 4801
Smiths Redruth	01209 315 512
Smiths Verwood	01202 824 347
Main Office	0845 527 3331

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