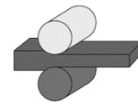


MATERIAL DATASHEET

ROLLED SHEETS

EN AW 5083 [AlMg4,5Mn0,7]



HARTMANN
www.hartmann-metalle.de

The aluminum alloy EN AW-5083 belongs to the 5000 series and is known for its exceptionally high strength, especially in non-heat treatable alloys. It consists mainly of aluminum and magnesium and is one of the most robust alloys in this series. Nevertheless, it exhibits remarkable corrosion resistance, even in extreme environments such as salt water or aggressive industrial atmospheres. EN AW-5083 exhibits excellent weldability, making it ideal for applications in highly stressed structures.

Typical applications of EN AW-5083 are:

- Shipbuilding: hull structures, superstructures, tanks and other components that require both strength and corrosion resistance
- Transportation industry: heavy-duty trailers, railroad wagons and tankers, where the combination of strength and low weight is an advantage
- Pressure vessel construction: production of pressure tanks and storage tanks for liquefied gas and other aggressive media
- Military and defense applications: Armored vehicles and protective panels due to their robust mechanical properties

Chemical composition (according to EN 573-3:2013 in %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Sn	Sonstige
0,40	0,40	0,10	0,40 - 1,00	4,00 - 4,90	0,05 - 0,25	0,25	0,15	0	0	max. 0,15

Mechanical properties (according to EN 485-2:2016, minimum values)

Temper	Thickness [mm]	R _{p0,2} [MPa]	R _m [MPa]	A [%]	A ₅₀ [%]	Biegeradius [t]	
						180°	90°
0 / H111	0,2 - 0,5	125	275 - 350	-	11	1,0	0,5
	0,5 - 1,5	125	275 - 350	-	12	1,0	1,0
	1,5 - 3,0	125	275 - 350	-	13	1,5	1,0
	3,0 - 6,3	125	275 - 350	-	15	-	1,5
	6,3 - 12,5	115	270 - 345	-	16	-	2,5

Temper descriptions

0 / H111 Annealed and slightly strain-hardened during subsequent operations such as stretching or leveling

Reference values for physical properties

Density [g/cm ³]	Elastic modulus [GPa]	Thermal conductivity [W/m ² K]	Thermal expansion [K * 10 ⁶] 20°C - 100°C	Specific heat [J / KG * K]	Electrical conductivity [m/Ω*mm ²]	Shear modulus [GPa]
2,66	71	110 - 140	24,2	900	16 - 19	26,8

Other data (empirical values)

Mechanical processing

Milling / Turning	3
Eroding	1

Forming

Bending	2
Upsetting	3
Pressure forming	4

Welding

Gas	4
WIG	2
MIG	2
Resistance welding	2

Solder

Brazing with flux	5
Brazing without flux	5
Soft with flux	5

Surface treatment

Technical anodizing	2
Decorative anodizing	4
Powder coating	4
Wet painting	4

Corrosion resistance

Normal climate	1
Sea climate	1

1 - Very good | 2 - Good | 3 - Moderate | 4 - Poor | 5 - Unsuitable

Approvals

EUROCODE acc. DIN EN 1999-1-1	Food industry acc. DIN EN 602	REACH	ROHS
✓	✓	✓	✓

W. Hartmann & Co. GmbH – Möllner Landstraße 107 – 22113 Oststeinbek – Germany – <http://www.hartmann-metalle.de>
Stand: 13.11.2024

Our data sheets contain non-binding information for guidance only. Liability for this is excluded. We reserve the right to make changes to standards and specified values. Only the provisions of our order confirmation are binding. With regard to anodizability, we would like to point out that no liability is assumed for the anodizing result and the colour formation in the decorative area. We also accept no liability for corrosion resistance. Special agreements must be made in writing.