



ALUMINIUMS Alloys Aluminium - Magnesium 5083

Chemical composition

%	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	
Minimum				0,40	4,00	0,05			Ti+Zr	
Maximum	0,40	0,40	0,10	1,00	4,90	0,25	0,25	0,15	0,20	0,15

International Equivalences

Europe	USA	Spain	France	Germany	G.B.	Italy	Sweden	Switzerland	Japan
E.N. 573	A.A.	U.N.E.	AFNOR	D.I.N.	B.S.	U.N.I.	S.I.S.	V.S.M.	J.I.S.
EN AW 5083	5083	38.340 L-3321	A-G4.5MC	ALMg4.5Mn 3.3547	N8	7790 9005/5	4140	ALMg4.5 Mn	A 5083

Mechanical properties of sheets Standard: EN 485-2 Aluminium EN AW-5083 [Al Mg4,5Mn0,7]

Treatment state	Nominal thickness mm		R _m MPa		R _{p0,2} MPa		Min. elongation %		Bending radius		Hardness HBS ¹⁾
	Greater than	up to	min.	max.	min.	max.	A _{50mm}	A	180°	90°	
F ¹⁾	≥2,5	150,0	275								
O/H111	0,2	0,5	275	350	125		11		1,0 t	0,5 t	75
	0,5	1,5	275	350	125		12		1,0 t	1,0 t	75
	1,5	3,0	275	350	125		13		1,5 t	1,0 t	75
	3,0	6,0	275	350	125		15			1,5 t	75
	6,0	12,5	275	350	125		16			2,5 t	75
	12,5	50,0	275	350	125			15			75
	50,0	80,0	270	345	115			14			73
	80,0	120,0	265		110			12			70
H112	≥6,0	12,5	275		125		12				75
	12,5	40,0	275		125			10			75
	40,0	80,0	270		115			10			73
H116 ²⁾	≥1,5	3,0	305		215		8		3,0 t	2,0 t	89
	3,0	6,0	305		215		10			2,5 t	89
	6,0	12,5	305		215		12			4,0 t	89
	12,5	40,0	305		215			10			89
	40,0	80,0	285		200			10			83
H22/H32	0,2	0,5	305	380	215		5		2,0 t	0,5 t	89
	0,5	1,5	305	380	215		6		2,0 t	1,5 t	89
	1,5	3,0	305	380	215		7		3,0 t	2,0 t	89
	3,0	6,0	305	380	215		8			2,5 t	89
	6,0	12,5	305	380	215		10			3,5 t	89
	12,5	25,0	305	380	215			9			89

1) Solely for information.

2) The material provided in this state must be able to show no sign of exfoliation corrosion after being subjected to accelerated testing of susceptibility to exfoliation corrosion according to ASTM G66-86.



ALUMINIUMS Alloys Aluminium - Magnesium 5083

Mechanical properties

Standard: EN 755-2

Alloy: EN AW-5083 [Al Mg4,5Mn0,7]

Extruded bar

Treatment state	Measurements mm		R _m MPa		R _{p0,2} MPa		A %	A _{50 mm} %
	D ¹⁾	S ²⁾	min.	max.	min.	max.	min	min.
F ⁴⁾	< 200	200	270	–	110	–	12	10
	200 < D < 250	200 < S < 250	260	–	100	–	12	–
O, H111	≤ 200	≤ 200	270	–	110	–	12	10
H112	≤ 200	≤ 200	270	–	125	–	12	10

Extruded tube

Treatment state	Measurements mm e ³⁾	R _m MPa		R _{p0,2} MPa		A %	A _{50 mm} %
		min.	max.	min.	max.	min	min.
F ⁴⁾	All	270	–	110	–	12	10
O, H111	All	270	–	110	–	12	10
H112	All	270	–	125	–	12	10

Extruded profile

Treatment state	Measurements mm e ³⁾	R _m MPa		R _{p0,2} MPa		A %	A _{50 mm} %
		min.	max.	min.	max.	min	min.
F ⁴⁾	All	270	–	110	–	12	10
H112	All	270	–	125	–	12	10

1) D = Diameter of circular section bars.

2) S = Distance between faces for square-section and hexagonal bars, thickness for rectangular section bars.

3) e = Wall thickness.

4) Treatment state "F": the values of the characteristics are indicated merely for the sake of information.

Physical properties

Modulus of elasticity N/mm ²	Specific weight g/cm ³	Melting temperature °C	Linear expansion coefficient 1/10 ⁶ K	Thermal conductivity W/mK	Electrical resistivity at 20°C - μΩ cm	Electrical conductivity% IACS	Dissolution potential V
71.000	2,66	580-640	23,9	117	6,0	28,5	0,86

Technological suitabilities

Welding	Natural behaviour	Anodized	Mechanization	State: H-111 H-32	
Under flame	MB In a rural environment	MB For protection	Chip fragmentation	R	R
At the arc under argon gas	MB In an industrial environment	MB Decorative	Surface gloss	MB	MB
Owing to electrical resistance	MB In a marine environment	MB Hard anodized			
Brazed	M In sea water				

Thermal treatments

Forging temperature: 350°- 480°C.
Total annealing: from 30 minutes to 2 hours between 345°C – 380°C.
Partial annealing: 240°C.

Products

Bars, sheets, plates, tubes, profiles.

Observations and applications

Alloy with high resistance to corrosion and good weldability which is why it is used in shipbuilding, the automobile industry and all kinds of boiler-making. It is also used owing to its ease of machining for tools in the aeronautical sector, the construction of machinery for the textile industry, containers, packaging etc. Used to manufacture moulds for footwear, thermoforming, blowing and industry as a whole.