



ALUMINIUMS Alloys Aluminium - Magnesium - Silicon 6005 A

Chemical composition

%	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Mn+Cr	Others
Minimum	0,50				0,40				0,12	
Maximum	0,90	0,35	0,30	0,50	0,70	0,30	0,20	0,10	0,50	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 6005 A	6005 ^a	38.349 L-3454	A-SG0.5	AlMgSi0.7 3.3210		9006/6-P6		AlMgSi0.7	

Mechanical properties

Standard: EN 755-2

Alloy: EN AW-6005 [Al SiMg]

Extruded bar

Treatment state	Measurements mm		R _m MPa		R _{p0,2} MPa		A %	A _{50 mm} %	Hardness HB
	D ¹⁾	S ²⁾	min.	max.	min.	max.	min	min.	
T6 ⁵⁾	≤ 25	≤ 25	270	–	225	–	10	8	90
	25 < D ≤ 50	25 < S ≤ 50	270	–	225	–	8	–	90
	50 < D ≤ 100	50 < S ≤ 100	260	–	215	–	8	–	90

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.
T6 ⁵⁾	≤ 5	270	–	225	–	8	6
	5 < e ≤ 10	260	– 215	–	–	8	6

Extruded profile ¹⁰⁾

Treatment state	Measurements mm e ³⁾	R _m MPa		R _{p0,2} MPa		A %	A _{50 mm} %
		min.	max.	min.	max.	min	min.
Perfil abierto T4 ⁵⁾	≤ 25	180	–	90	–	15	13
T6 ⁵⁾	≤ 5	270	–	225	–	8	6
	5 < e ≤ 10	260	–	215	–	8	6
	10 < e ≤ 25	250	–	200	–	8	6
Perfil hueco T4 ⁵⁾	≤ 10	180	–	90	–	15	13
T6 ⁵⁾	≤ 5	255	–	215	–	8	6
	5 < e ≤ 15	250	–	200	–	8	6

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.

5) The characteristics can be obtained by means of cooling in a press

10) In the case that the cross section is composed of elements of different thickness, with different mechanical characteristics values, the lowest values should be considered valid for the entire section.



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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
69.500	2,71	600-650	23,5	192	3,4	49,5	-0,83

Technological suitabilities

Welding		Natural behaviour		Anodized		Mechanization		State: T5	T6
Under flame	MB	In a rural environment	MB	For protection	MB	Chip fragmentation	R	R	
At the arc under argon gas	B	In an industrial environment	B	Decorative	B	Surface gloss	MB	MB	
Owing to electrical resistance	MB	In a marine environment	B	Hard anodized	MB				
Brazed	MB	In sea water	R						

Thermal treatments

Forging temperature interval: 350°-500°C.
 Total annealing: 420°C with long-term cooling up to 250°C.
 Annealing against acidity: 340°C

Products

Bars, wire, extruded profiles, tubes.

Observations and applications

This alloy is very easy to extrude. With the T5 state, a better surface finish and enhanced straightness. It is used for bus and railway wagon structures, electricity poles, platforms, piping, shipbuilding, the automobile industry etc.