Chemical composition

%	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others
Minimum	0,30	0,10			0,40				
Maximum	0,60	0,30	0,10	0,30	0,60	0,05	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 6063	6063	38.337 L-3441	A-GS	ALMgSi0.5 3.3206	H9	3569 9006-P1	4104	AlMgSi 0.5	A2X5

Mechanical properties

Standard: EN 755-2 **Alloy: EN AW-6063 [Al Mg0,7Si]**

Extruded bar

Treatment state	Measurements mm		R_m MPa		$R_{p0,2}$ MPa		A %	$A_{50\ mm}$ %	Hardness HBS
	D[1]	S[2]	min.	max.	min.	max.	min	min.	
O, H111	≤ 200	≤ 200	–	130	–	–	18	16	25
T4	≤ 150	≤ 150	130	–	65	–	14	12	50
	150 < *D* ≤ 200	150 < *S* ≤ 200	120	–	65	–	12	–	50
T5	≤ 200	≤ 200	175	–	130	–	8	6	60
T6[5]	≤ 150	≤ 150	215	–	170	–	10	8	75
	150 < *D* ≤ 200	150 < *S* ≤ 200	195	–	160	–	10	–	75
T66[5]	≤ 200	≤ 200	245	–	200	–	10	8	

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.
O, H111	≤ 25	–	130	–	–	18	16
T4[5]	≤ 10	130	–	65	–	14	12
	10 < *e* ≤ 25	120	–	65	–	12	10
T5	≤ 25	175	– 130		–	8	6
T6[5]	≤ 25	215	–	170	–	10	8
T66[5]	≤ 25	245	– 200		–	10	8

Mechanical properties

Standard: EN 755-2 **Alloy: EN AW-6063 [Al Mg0,7Si]**

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.
T4[5)]	≤ 25	130	–	65	–	14	12
T5	≤ 3	175	–	130	–	8	6
	3 < e ≤ 25	160	–	110	–	7	5
T65)	≤ 10	215	–	170	–	8	6
	10 < e ≤ 25	195	–	160	–	8	6
T64[5)8)]	≤ 15	180	–	120	–	12	10
T66[5)]	≤ 10	245	–	200	–	8	6
	10 < e ≤ 25	225	–	180	–	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
8) Bending quality
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.

Physical properties

Modulus of elasticity N/mm²	Specific weight g/cm³	Melting temperature ºC	Linear expansion coefficient 1/10⁶K	Thermal conductivity W/mK	Electrical resistivity at 20ºC - μΩ cm	Electrical conductivity% IACS	Dissolution potential V
69.500	2,70	615-655	23,5	T5-209	T5-3,1	T5-55,5	-0,80

Technological suitabilities

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

Thermal treatments

Forging temperature interval: 400º-480ºC.
Total annealing: 420ºC with long-term cooling up to 250ºC.
Annealing against acridity: 340ºC

Products

Bars, wires, extruded profiles, tubes.

Observations and applications

The most notable characteristic of this alloy is its ease of extrusion. This means it is used a lot in profiling: doors, windows, curtain walls, furniture, structures, stairs, rungs, guard rails, fences, lattices, barriers, railings, heat dissipators, engine bodyworks, irrigation, heating and refrigeration tubes, special elements for machines etc.