Chemical composition

%	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti		Others
Minimum	0,40		0,15		0,80	0,04			Others	Total
Maximum	0,80	0,70	0,40	0,15	1,20	0,35	0,25	0,15	0,05	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 6061	6061	38.342 L-3420	A-SGUC	ALMgSi1Cu 33206	H20	6170 9006-P2			

Mechanical properties of sheets Standard: EN 485-2 Aluminium EN AW-6061 [Al Mg1SiCu]

Treatment state	Nominal thickness mm		R_m MPa		$R_{p0,2}$ MPa		Min. elongation %		Bending radius		Hardness HBS
	Greater than	up to	min.	max.	min.	max.	A_{50mm}	A	180º	90º	
O	≥0,4	1,5		150		85	14		1,0 *t*	0,5 *t*	40
	1,5	3,0		150		85	16		1,0 *t*	1,0 *t*	40
	3,0	6,0		150		85	19			1,0 *t*	40
	6,0	12,5		150		85	16			2,0 *t*	40
	12,5	25,0		150				16			40
T4, T451	≥0,4	1,5	205		110		12		1,5 *t*	1,0 *t*	58
	1,5	3,0	205		110		14		2,0 *t*	1,5 *t*	58
	3,0	6,0	205		110		16			3,0 *t*	58
	6,0	12,5	205		110		18			4,0 *t*	58
T451	12,5	40,0	205		110			15			58
	40,0	80,0	205		110			14			58
T42	≥0,4	1,5	205		95		12			1,0 *t*	57
	1,5	3,0	205		95		14			1,5 *t*	57
	3,0	6,0	205		95		16			3,0 *t*	57
	6,0	12,5	205		95		18			4,0 *t*	57
	12,5	40,0	205		95			15			57
	40,0	80,0	205		95			14			57
T6, T651, T62	≥0,4	1,5	290		240		6			2,5 *t*	88
	1,5	3,0	290		240		7			3,5 *t*	88
	3,0	6,0	290		240		10			4,0 *t*	88
	6,0	12,5	290		240		9			5,0 *t*	88
T651, T62	12,5	40,0	290		240			8			88
	40,0	80,0	290		240			6			88
	80,0	100,0	290		240			5			88
	100,0	150,0	275		240			5			84
	150,0	175,0	265		230			4			81

Mechanical properties

Standard: EN 755-2 **Alloy: EN AW-6061 [Al Mg1SiCu]**

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	–	150	–	110	16	14	40
T4	≤ 200	≤ 200	180	–	110	–	15	13	60
T6	≤ 200	≤ 200	260	–	240	–	8	6	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.
O, H111	≤ 25	–	150	–	110	16	14
T4	≤ 25	180	– 110		–	15	13
T6	≤ 5	260	–	240	–	8	6
	5 < *e* ≤ 25	260	– 240		–	10	8

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.
T4	≤ 25	180	–	110	–	15	13
T6	≤ 5	260	– 240		–	9	7
	5 < *e* ≤ 25	260	–	240	–	10	8

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.

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
70.000	2,70	580-650	23,3	T4-155 T6-166	T4-4,3 T6-4,0	T4-40 T6-43	-0,83

Technological suitabilities

Welding		Natural behaviour		Anodized		Mechanization	State: 0	T6
Under flame	MB	In a rural environment	MB	For protection	MB	Chip fragmentation	M	R
At the arc under argon gas	B	In an industrial environment	MB	Decorative	R	Surface gloss	R	MB
Owing to electrical resistance	B	In a marine environment	B	Hard anodized	MB			
Brazed	B	In sea water	R					

Thermal treatments

Forging temperature interval: 350º-500ºC.
Total annealing: 420ºC with long-term cooling up to 250ºC. Annealing against acridity: 340ºC

Products

Bars, wires, extruded profiles, tubes, sheets, plates.

Observations and applications

Alloy endowed with similar characteristics and uses to 6082.
Good mechanical characteristics in T6 state. Good corrosion-proofing and suitability for anodization both hard and protection as well as good arc welding. Typical applications are: structural elements as a whole, shipbuilding and aerospace industry, railway constructions, moulds and machined parts etc.