

Alloy EN AW-6101B [EAl MgSi(B)]

Technical datasheet - Extruded products

Alloy 6101B is a medium strength alloy which is specifically dedicated to applications where a high conductivity is required.

Typical Applications

- Electrical busbar
- Heatsinks

Chemical Composition¹

Si		Fe		Cu		Mn		Mg		Cr		Zn		Ti		Pb		Bi	Sn	Others	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Max	Max	Each	Tot
0.30	0.60	0.10	0.30	0.05		0.05		0.35	0.60			0.10								0.03	0.10

¹ Chemical composition in weight-% according to EN-573-3:2013

Mechanical Properties^{2,3}

Temper	Wall thickness t [mm]	R _{p0.2} [MPa]	R _m [MPa]	A [%]	A _{50mm} [%]	HBW ^d TYPICAL VALUE	Vickers ^d TYPICAL VALUE	Webster ^d TYPICAL VALUE
T6 ^{a b}	t ≤ 15	160	215	8	6	70	80	14
T7 ^{a c}	t ≤ 15	120	170	12	10	60	68	12

² Properties according to EN 755-2:2016 for extruded profile, minimum values unless else specified

³ If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile section

^a Properties may be obtained by press quenching

^b Electrical conductivity ≥ 30 MS/m

^c Electrical conductivity ≥ 32 MS/m

^d Brinell hardness values for information only. Vickers and Webster converted from Brinell value and should be considered approximate

Temper Designations⁴

T4	Solution heat treated and naturally aged
T5	Cooled from an elevated temperature shaping process and then artificially aged
T6	Solution heat treated and then artificially aged
T64	Solution heat treated and then artificially aged in underageing conditions (between T6 and T61) to improve formability
T66	Solution heat treated and then artificially aged – mechanical property level higher than T6 achieved through special control of the process
T7	Solution heat treated and then artificially overaged

⁴ Temper designations according to EN 515:1993

Physical Properties⁵

Temper	Modulus of Elasticity [GPa]	Modulus of Rigidity [GPa]	Melting Range [°C]	Density [g/cm ³]	Thermal Conductivity [W/m·K]	Specific Heat Capacity [J/kg·K]	Electrical Resistivity [nΩm]	Electrical Conductivity [MS/m]	Coefficient of linear expansion [10 ⁻⁶ K ⁻¹]
T6	70	26	590 - 650	2.70	218	901	30	33.3	23.5

⁵ Reference: MNC Handbok nr 12, version 2, SIS, 1989. Typical properties at room temperature 20°C

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Conductivity Ageing Response

Conductivity can be increased further but on the cost of mechanical strength, see chart for typical relationship between hardness and electrical conductivity when over-ageing.

Provided for informational purposes only, not to be considered as guaranteed properties. Results are valid for the investigated specimens taken from a specific sample.

6101B - Conductivity and Hardness - Ageing Response

