

ALLOY DATA SHEET EN-AW 6082[AlMgSi] (Type: High strength structural alloy)

The alloy EN AW-6082 is a high strength extrusion alloy for highly loaded structural applications. Typical applications are scaffolding elements, rail coach parts, offshore constructions, containers, machine building and mobile cranes. Due to the fine grained structure this alloy exhibits a good resistance to dynamic loading conditions. EN AW-6082 is certified for use in marine applications

Chemical composition according to EN573-3 (weight%, remainder Al)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	remarks	others	
									each	total
0.70-1.3	max. 0.50	max. 0.10	0.40-1.0	0.6-1.2	max. 0.25	max. 0.20	max. 0.10		max. 0.05	max. 0.15

Mechanical properties according to EN755-2

Temper*	Wallthickness e*** [mm]	Yield stress Rp _{0.2} [MPa]	Tensile strength Rm [MPa]	Elongation		Hardness** HB
				A [%]	A ₅₀ [%]	
T4	≤ 25	110	205	14	12	65
T5	≤ 5	230	270	8	6	80
T6	≤ 5	250	290	8	6	95
	5 < e ≤ 25	260	310	10	8	95

*Temper designation according to EN515: T4-Naturally aged to a stable condition, T5-cooled from an elevated temperature forming operation and artificially aged, T6-Solution heat treated, quenched and artificially aged, (T6 properties can be achieved by press quenching)

** Hardness values are for indication only

***For different wall thicknesses within one profile, the lowest specified properties shall be considered as valid for the whole profile cross section

Physical properties (approximate values, 20°C)

Density [kg/m ³]	Melting range [°C]	Electrical Conductivity [MS/m]	Thermal Conductivity [W/m.K]	Co-efficient of thermal Expansion 10 ⁻⁶ /K	Modulus of Elasticity [GPa]
2700	585-650	24-32	170-220	23.4	~70

Weldability¹

Gas: 3 TIG: 2 MIG: 1

Typical filler materials (EN ISO18273): SG-AlMg5Cr(A) or SG-Al4.5Mn0.7(A) or AlSi5. Due to the heat input during welding the mechanical properties will be reduced by approximately 50% (ref. EN1999-1).

Machining characteristics¹

T4 temper: 4 T5 and T6 temper: 2

Coating properties¹

Hard protecting anodising: 2 Decorative/bright/colour anodising: 3

Corrosion resistance¹

General: 2 Marine: 2

¹Relative qualification ranging from 1-very good to 6 unsuitable

