



ALIVE WITH ALUMINIUM

The alloy EN AW-6082 is a high strength 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	
0.70 – 1.30	max. 0.50	max. 0.10	0.40 – 1.00	0.60 – 1.20	max. 0.25	max. 0.20	max. 0.10		each max. 0.05	total max. 0.15

Mechanical properties according to EN755-2

Temper*	Wall thickness	Yield stress	Tensile strength		Elongation		Hardness**
			Rp _{0.2} [MPa]	Rm [MPa]	A [%]	A _{50mm} [%]	
T4	e ≤ 25	110	205	14	12	70	
T5 (open / hollow profile)	e ≤ 5	230	270	8	6	90	
T6 (open / hollow profile)	e ≤ 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 (20-100 °C)	Modulus of elasticity [GPa]
2700	585 – 650	24 – 32	170 – 220	23.4	~ 70

Weldability*

Gas: 3 TIG: 2 MIG: 2 Resistance welding: 3 Spot welding: 2
 Typical filler materials (EN ISO 18273): AlMg5Cr(A), AlMg4.5Mn0.7(A) or AlSi5. Due to the heat input during welding the mechanical properties will be reduced by approximately 50% (ref. EN 1999-1).

Machining characteristics*

T4 temper: 4 T5 and T6 temper: 2

Coating properties*

Hard/protective anodising: 1 Decorative/bright/colour anodising: 3

Corrosion resistance*

General: 1 Marine: 2