



ALIVE WITH ALUMINIUM

The alloy EN AW-6063 is a widely used extrusion alloy, suitable for applications where only modest strength properties are required. Parts can be produced with a good surface quality, suitable for many coating operations. Typical application fields are furniture, finishing materials, windows and doors, carbody finishing, façade construction, lighting columns and flagpoles.

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

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	remarks	others	
0.20 – 0.60	max. 0.35	max. 0.10	max. 0.10	0.45 – 0.90	max. 0.10	max. 0.10	max. 0.10		each max. 0.05	total max. 0.15

Mechanical properties according to EN755-2

Temper*	Wall thickness e***	Yield stress Rp _{0.2} [MPa]	Tensile strength Rm [MPa]	Elongation		Hardness** HB
				A [%]	A _{50mm} [%]	
T4	e ≤ 25	65	130	14	12	50
T5	e ≤ 10	130	175	8	6	65
	10 < e ≤ 25	110	160	7	5	65
T6	e ≤ 10	170	215	8	6	75
	10 < e ≤ 25	160	195	8	6	75
T66	e ≤ 10	200	245	8	6	80
	10 < e ≤ 25	180	225	8	6	80

* 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, T66-cooled from an elevated temperature forming operation and artificially aged to a condition with higher mechanical properties through special control of manufacturing processes. (T6/T66 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	28 – 34	200 – 220	23.4	~ 70

Weldability*

Gas: 3 TIG: 2 MIG: 1

Typical filler materials (EN ISO 18273): SG-AlMg5Cr(A) or AlSi5, and AlMg3 when the product has to be anodised. Due to the heat input during welding the mechanical properties will be reduced by approximately 50% (ref. EN1999-1).

Machining characteristics*

T4 temper: 4 T5 and T6 temper: 2

Coating properties*

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

Corrosion resistance*

General: 2 Marine: 2-3