

MATERIAL DATASHEET

EXTRUDED PROFILES EN AW 6063 [AlMg0,7Si]



The aluminum alloy EN AW-6063 belongs to the 6000 series and is based on a combination of aluminum, magnesium and silicon. It is known as a high-quality extrusion alloy with excellent properties for extrusion. EN AW-6063 offers higher strength compared to the similar alloy EN AW-6060, but with equally good corrosion resistance and excellent surface properties. Thanks to the finely tuned balance between strength and workability, this alloy is particularly versatile.

Typical applications of EN AW-6063 are:

- Construction industry: production of window frames, architectural profiles, stair railings and balcony systems
- Transportation: Components in vehicle construction, including trailer structures, frames and body elements
- Mechanical engineering: parts for lightweight constructions, housings and structural profiles
- Electronics: heat sinks and housings for electronic devices, as the alloy has good thermal conductivity

Chemical composition (according to EN 573-3:2013 in %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Sn	Sonstige
0,20 – 0,60	0,35	0,10	0,10	0,45 – 0,90	0,10	0,10	0,10	0	0	max. 0,15

Mechanical properties (according to EN 755-2:2016, minimum values)

Temper	Thickness [mm]	R _{p0,2} [MPa]	R _m [MPa]	A [%]	A ₅₀ [%]
T4	t ≤ 25	65	130	14	12
T5	t ≤ 10	130	175	8	6
	10 < t ≤ 25	110	160	7	5
T6	t ≤ 10	170	215	8	6
	10 < t ≤ 25	160	195	8	6
T64	t ≤ 15	120	180	12	10
T66	t ≤ 10	200	245	8	6
	10 < t ≤ 25	180	225	8	6

Temper descriptions

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 underaging conditions to improve formability
T66	Solution heat-treated and then artificially aged mechanical property level higher than T6 achieved through special control of the process

Reference values for physical properties

Density [g/cm ³]	Elastic modulus [GPa]	Thermal conductivity [W/m ² K]	Thermal expansion [K * 10 ⁶] 20°C – 100°C	Specific heat [J / KG * K]	Electrical conductivity [m/Ω*mm ²]	Shear modulus [GPa]
2,70	69	200-220	23,4	898	34-38	26,1

Other data (empirical values)

Mechanical processing

Milling / Turning	2-3
Eroding	1

Forming

Bending	3	(Temper T4)
Upsetting	2	(Temper 0)
Pressure forming	2	(Temper 0)

Welding

Gas	3
WIG	2
MIG	2
Resistance welding	2

Solder

Brazing with flux	2
Brazing without flux	2
Soft with flux	1

Surface treatment

Technical anodizing	1
Decorative anodizing	1-2
Powder coating	1
Wet painting	1

Corrosion resistance

Normal climate	1
Sea climate	2

1 - Very good | 2 - Good | 3 - Moderate | 4 - Poor | 5 - Unsuitable

Zulassungen

EUROCODE nach DIN EN 1999-1-1	Lebensmittelindustrie nach DIN EN 602	REACH	ROHS
✓	✓	✓	✓

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Stand: 13.11.2024

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