

# MATERIAL DATASHEET

## EXTRUDED PROFILES EN AW 6082 [AlSi1MgMn]



The EN AW-6082 aluminum alloy is part of the 6000 series and is characterized by its high strength, making it one of the most robust alloys in this series. It is based on aluminum, magnesium and silicon and is particularly suitable for applications that require high structural stability. EN AW-6082 also offers good corrosion resistance and is weldable, although a certain reduction in strength must be taken into account after welding. This alloy has moderate machinability and is particularly resilient in the hardened state (T6).

Typical applications of EN AW-6082 are:

- Mechanical engineering: production of load-bearing structures, heavy load carriers, machine frames and crane parts
- Shipbuilding: structural parts, hulls and superstructures where strength and corrosion resistance play a major role
- Vehicle construction: suspension parts, chassis and other heavy-duty components
- Construction industry: bridge structures, scaffolding, supports and other highly stressed building profiles

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

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Sn	Sonstige
0,70 – 1,30	0,50	0,10	0,40 – 1,00	0,60 – 1,20	0,25	0,20	0,10	0	0	max. 0,15

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

Temper	Thickness [mm]	R <sub>p0,2</sub> [MPa]	R <sub>m</sub> [MPa]	A [%]	A <sub>50</sub> [%]
0   H111	Alle	-	-	14	12
T4	≤ 25	205	110	14	12
T5 Open Profile	≤ 5	270	230	8	6
T5 Hollow Profile	≤ 5	270	230	8	6
T6 Open Profile	5 < t ≤ 25	310	260	10	8
T6 Hollow Profile	5 < t ≤ 15	310	260	10	8

### Temper descriptions

<b>T4</b>	Solution heat-treated and naturally aged
<b>T5</b>	Cooled from an elevated temperature shaping process and then artificially aged
<b>T6</b>	Solution heat-treated and then artificially aged
<b>T64</b>	Solution heat-treated and then artificially aged in underaging conditions to improve formability
<b>T66</b>	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 <sup>3</sup> ]	Elastic modulus [GPa]	Thermal conductivity [W/m <sup>2</sup> K]	Thermal expansion [K * 10 <sup>6</sup> ] 20°C – 100°C	Specific heat [J / KG * K]	Electrical conductivity [m/Ω*mm <sup>2</sup> ]	Shear modulus [GPa]
2,70	69,5	200-220	23,4	898	34-38	26,1

## Other data (empirical values)

### Mechanical processing

Milling / Turning	4
Eroding	1

### Forming

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

### Welding

Gas	3
WIG	2
MIG	1
Resistance welding	3

### Solder

Brazing with flux	4
Brazing without flux	4
Soft with flux	3

### Oberflächenbehandlung

Technical anodizing	1
Decorative anodizing	3
Powder coating	2
Wet painting	2

### Corrosion resistance

Normal climate	1
Sea climate	2

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

## Approvals

EUROCODE acc. DIN EN 1999-1-1	Food industry acc. DIN EN 602	REACH	ROHS
✓	✓	✓	✓

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