MATERIAL DATASHEET

EXTRUDED PROFILES
EN AW 6005A [AlSiMg(A)]

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The aluminum alloy EN AW-6005A belongs to the 6000 series and consists of aluminum, magnesium and silicon. This alloy is characterized by a medium to high strength, which is above that of EN AW-6060, but below the strength of EN AW-6082. EN AW-6005A offers good corrosion resistance and is easy to extrude, allowing even complex profiles to be produced efficiently. It welds well and offers moderate machinability, making it a versatile option for various applications.

Typical applications of EN AW-6005A are:

- Construction industry: load-bearing profiles, posts and beams used in architectural structures and scaffolding
- Transportation: Guard rails, roof racks and structures for trailers as well as rail systems
- Mechanical engineering: Elements that require medium load-bearing capacity and corrosion resistance, such as frames and housings
- Energy technology: Components of solar systems and mast structures for energy distribution

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

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Sn	Sonstige
0,50 – 0,90	0,35	0,30	0,50	0,40 – 0,70	0,30	0,20	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	60	120	16	14
T5	t ≤ 5	120	160	8	6
	5 < t ≤ 25	100	140	8	6
T6	t ≤ 3	150	190	8	6
	5 < t ≤ 25	140	170	8	6
T64	t ≤ 15	120	180	12	10
T66	t ≤ 5	160	215	8	6
	5 < t ≤ 25	150	195	8	6

Temper descriptions

T4	Solution heat-treated and naturally aged
T5	Cooled from an elavated 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/cm³]	Elastic modulus [GPa]	Thermal conductivity [W/m²K]	Thermal expansion [K * 10⁶] 20°C – 100°C	Specific heat [J / KG * K]	Electrical conductivity [m/Ω*mm²]	Shear modulus [GPa]
2,70	69,5	200-220	23,4	898	34-38	26,1

Other data (empirical values)

Mechanical processing

Milling / Turning	3	
Eroding	2	

Forming

Bending	3	(Zustand T4)
Upsetting	3	(Zustand 0)
Pressure forming	3	(Zustand 0)

Welding

Gas	3
WIG	2
MIG	2
Resistance welding	2

Solder

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

Surface treatment

Technical anodizing	1
Decorative anodizing	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

Approvals

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