Aluminium Alloy Data Sheet - Extruded Product

EN AW-6063 | AlMg0,7Si

EN AW 6063 is a silicon and magnesium-based Al-Mg-Si alloy distinguished by its excellent surface finish, good formability, and moderate mechanical strength, making it a preferred material in architectural and structural applications. Its high suitability for anodizing processes ensures widespread use in façade systems and decorative profile production in compliance with international standards.

Chemical Composition [1] (weight %)

Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others
0,20-0,60	≤0,35	≤0,10	≤0,10	0,45-0,90	≤0,10	≤0,10	≤0,10	Each ≤0,05 Total ≤0,15

[1] according to EN 573-3:2024

Typical Applications

- Architectural curtain walls and window frames
- Interior and exterior decorative profiles
- Balustrades and railing systems
- Sign frames and exhibition structures
- Heat sinks and electronic housings
- Furniture components and lighting fixtures
- Transportation trim parts and bicycle frames

Mechanical Properties [2,3] (Extruded Profiles)

Temper	Wall Thickness t (mm)	R_m (MPa)	$R_{p0,2}$ (MPa)	A (%)	A_{50mm} (%)	Hardness Typical Value HBW
T4[a]	t≤25	130	65	14	12	50
T5	t≤10	175	135	8	6	65
	10<t ≤25	160	110	7	5	65
T6 [a]	t≤10	215	170	8	6	75
	10<t ≤25	195	160	8	6	75
T64 [a b]	t≤15	180	120	12	10	65
T66 [a]	t≤10	245	200	8	6	80
	10<t ≤25	225	180	8	6	80

[2] according to EN 755-2:2016 for extruded profile, minimum values unless else specified
[3] If a profile cross section comprises different thickness which fall in more than one set of specified mechanical property values, the lowest specified value shall be considered as valid for the whole profile cross section
[a] Properties may be obtained by press quenching
[b] Bending Quality

Temper Designation [4]

T4	Solution heat treated and naturally aged
T5	Cooled from an elevated temperature shaping process and then artifically aged
T6	Solution heat treated and artificially aged
T64	Solution heat-treated and then artificially aged in underageing conditions (between T6 and T61) to improve formability
T66	Solution heat-treated and then artificially aged - mechanical property level higher than T6 achieved through special control of the process 6000 series alloys)

[4] according to EN 515:2017

Physical Properties (Typical Values) [5]

Property	Value	Unit
Density	2.70	g/cm^3
Melting Range	615-655	°C
Thermal Conductivity	~200	W/m.K
Electrical Conductivity	28-31	MS/m
Modulus of Elasticity	~69	GPa
Coefficient of Expansion	23.4	$10^{-6}K^{-1}$

[5] The values presented above are typical for Aluminum Alloy 6063 and may vary depending on manufacturing process, temper condition, and specific application. They are intended for general information purposes only and should not be considered as guaranteed specifications

Weldability

EN AW 6063 offers excellent weldability with all conventional welding methods, including TIG (GTAW), MIG (GMAW), laser welding and resistance welding. It exhibits good fusion characteristics and minimal susceptibility to hot cracking. Post-weld heat treatment or mechanical finishing may be applied to restore mechanical properties in the heat-affected zone, especially for T6-tempered materials.

Recommended Storage Condition

Store in dry, covered, and well-ventilated environments.

Protect from direct sunlight, high humidity, and chemical vapours.

Prevent mechanical damage by using proper packaging or vertical stacking when possible