Technical Datasheet

AA 7075 /AlZn5,5MgCu

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BRIEF DESCRIPTION

AA 7075 is mainly used for (machine) construction and apparatus subject to high static or dynamic loading.

Typical applications include heavy duty moving components for cutting, stamping machines, alpine ski and climbing equipment, safety products, sprockets or aircargo pallets
In the TO temper the material can be easily formed into different shapes and receive the heat treatment in the final shape.

CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Ti	Zn	Cr	Al
0.10	0.10	1.2	max.	2.1	max.	5.1	0.18	
0.40	0.50	2.0	0.10	2.9	0.10	6.1	0.28	rest

PHYSICAL PROPERTIES (nominal values)

Density	2.82g/cm^3
Elastic Modulus	72000 MPa
Lin. thermal expansion coefficient (20°C-100°C)	23.6 10^{-6} K^{-1}
Thermal conductivity	115 - 140 W/mK
Electrical conductivity	17 - 21 MS/m

PROCESSING METHODS

Weldability
- TIG/MIG — not possible
- by resistance — good

Anodizing
- technical — good
- decorative — moderate

Machinability — excellent

Corrosion behaviour
- moderate in inland atmosphere
- critical in marine atmosphere

AVAILABILITY

AA 7075 is available in tempers T0 and T6 (or T651 when controlled stretched) up to 125mm thick. Plates beyond 125mm are stress relieved by cold compression. Plates above 80mm have reduced core strength (< 400 MPa yield)

MECHANICAL STRENGTH

Tensile properties (Temper T0 / EN Standard 485-2)

Thickness (over ... to)	Temper	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	HB
0.5 – 75 mm	T0	275(max.)	145(max.)	10	55
0.8 – 3.0 mm	T6	540	460	7	160
3.0 – 6.0 mm	T6(51)	545	475	8	163
6.0 – 25.0 mm	T651	540	470	6	163

Typical tensile properties

Thickness (over ... to)	Temper	Rm [MPa]	Rp0.2 [MPa]	A50 [%]	HB
0.5 – 75mm	T0	230	125	18	62
0.8 – 3.0 mm	T6	575	510	7	160
3.0 – 6.0 mm	T6(51)	570	510	7	161
6.0 – 25.0 mm	T651	565	505	6	163

HEAT TREATMENT T0 → T6

The T0 temper has optimal formability properties and may be used for difficult bended and deep drawn products. After the product is formed the T6 temper can be reached by a 4-step heat treatment. Info on the specific heat treatment is available upon request