Technical Datasheet

EN-AW 7075 /AlZn5,5MgCu

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BRIEF DESCRIPTION

EN-AW 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, aircraft seats 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.

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

EN-AW 7075 alloy extruded bars and seamless extruded tubes are available in tempers TO/H111 and T6 (or T651 when controlled stretched)
In the dimensions:

Diameter
≤ 200 mm

CHEMICAL COMPOSITION (weight %)

Si	Fe	Cu	Mn	Mg	Ti	Zn	Cr	Al
max. 0.4	max. 0.5	1.2 2.0	max. 0.3	2.1 2.9	max. 0.2	5.1 6.1	0.18 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

MECHANICAL STRENGTH

Min. Tensile properties (EN Standard 755-2)

Dimension	Temper	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
Bar (diameter)				
≤ 200mm	TO/H111	≤275	≤165	≥8
≤ 25mm	T6	≥540	≥480	≥5
25 – 100mm	T6	≥560	≥500	-
100 – 150mm	T6	≥530	≥470	-
150 – ≤200mm	T6	≥470	≥400	-
Tube (wall thickness)				
≤ 10mm	TO/H111	≤275	≤165	-
≤ 5mm	T6	≥540	≥485	≥6
5 – 10mm	T6	≥560	≥505	≥5
10 – 50mm	T6	≥560	≥495	≥4

Typical tensile properties

Dimension	Temper	Rm [MPa]	Rp0.2 [MPa]	A50 [%]
Bar (diameter)				
≤ 80mm	TO/H111	249	162	14
5 - 25mm	T6	662	638	8
≤ 100mm	T6	582	547	10

HEAT TREATMENT TO → T6

The TO 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