EN AW-7075

Alloy: AlZnMgCu1,5
Werkstofnummer: 3.4365

Product Description

Aluminium alloy 7075 is one of the strongest commercially available aluminium alloys, belonging to the 7000-series. Zinc and copper additions give high specific strength with good toughness and fatigue resistance. Note: 7075 is not suitable for fusion welding and has inherently low corrosion resistance. Anodising is recommended; colour variation may result.

Key Characteristics

- Highest strength grade in this range
- Very good machinability despite high strength
- Good toughness and fatigue resistance
- NOT suitable for fusion welding
- Low inherent corrosion resistance — anodising strongly recommended
- Colour variation possible after anodising

Mechanical Properties — EN 485-2

Tensile Strength (Rm)	503 MPa (min)
Yield Strength (Rp0.2)	435 MPa (min)
Elongation at Break (A50)	7% (min)
Hardness	~150 HB (Brinell, ISO 6506)
Elastic Modulus (E)	~72 GPa
Density	2.81 g/cm³
Thermal Conductivity	~130 W/m·K
Coeff. of Thermal Expansion	23.6×10^{-6} /K (20–100 °C)
Melting Range	477–635 °C
Electrical Conductivity	~33% IACS

Chemical Composition — EN 573-3

Silicon (Si)	≤ 0.40%
Iron (Fe)	≤ 0.50%
Copper (Cu)	1.20–2.00%
Manganese (Mn)	≤ 0.30%
Magnesium (Mg)	2.10–2.90%

Chromium (Cr)	0.18–0.28%
Zinc (Zn)	5.10–6.10%
Titanium (Ti)	≤ 0.20%
Aluminium (Al)	Remainder

Machining Notes

Very good machinability at high cutting speeds with carbide tooling and flood coolant. Stress-relieved stock minimises distortion during aggressive material removal. Do not specify for welded assemblies. For corrosion protection specify anodising or chromate conversion coating.

Typical Applications

Aerospace structural components, wing spars, fuselage frames, defence equipment, high-performance sporting goods, precision tooling, gears and shafts under high dynamic load.