EN AW-6082

Alloy: AlMgSi1
Werkstofnummer: 3.2315

Product Description

Aluminium alloy 6082 is one of the most widely specified alloys in the 6000-series. Characterised by magnesium and silicon additions, it is heat-treatable to high strength, delivering an excellent balance of strength, corrosion resistance, and machinability. Stress-relieved stock provides improved dimensional stability during deep machining.

Key Characteristics

- High strength with good corrosion resistance
- Very good machinability — recommended general-purpose CNC grade
- Good weldability (MIG and TIG)
- Heat-treatable
- Anodises well — natural and hard (Type III)

Mechanical Properties — EN 485-2

Tensile Strength (Rm)	310 MPa (min)
Yield Strength (Rp0.2)	260 MPa (min)
Elongation at Break (A50)	8% (min)
Hardness	~95 HB (Brinell, ISO 6506)
Elastic Modulus (E)	~70 GPa
Density	2.71 g/cm³
Thermal Conductivity	~170 W/m·K
Coeff. of Thermal Expansion	23.4×10^{-6} /K (20–100 °C)
Melting Range	605–655 °C
Electrical Conductivity	~43% IACS

Chemical Composition — EN 573-3

Silicon (Si)	0.70–1.30%
Iron (Fe)	≤ 0.50%
Copper (Cu)	≤ 0.10%
Manganese (Mn)	0.40–1.00%
Magnesium (Mg)	0.60–1.20%

Chromium (Cr)	≤ 0.25%
Zinc (Zn)	≤ 0.20%
Titanium (Ti)	≤ 0.10%
Aluminium (Al)	Remainder

Machining Notes

Excellent machinability; recommended default CNC grade for structural applications. Carbide tooling at medium-to-high speeds with coolant. Suitable for tapping M3 and above. Stress-relieved stock minimises distortion during deep pocketing.

Typical Applications

Structural frames, transport equipment, aerospace secondary structures, mould tooling, hydraulic manifolds, machine parts, heavily loaded components, anodised enclosures.