

Aluminium 6082 Specification Datasheet

Aluminum 6082 is often referred to as a ‘structural alloy’ and promotes the highest strength of all 6000 series alloys.

Used predominantly in high-stressed applications such as bridges, cranes and roof structures, the alloy’s extruded finish is not as smooth as others in the 6000 series, so it is not as aesthetically pleasing. In many applications, 6082 has replaced 6061 due to several factors, including excellent corrosion resistance and improved machinability



Product Forms Available

- Plates & Sheets (ASTM B209)
- Round Bars, Flat Bars, Square Bars (ASTM B221)
- Pipes & Tubes (ASTM B210)
- Extruded Profiles & Angles
- Custom CNC-machined components

Key Features :

Highest strength alloy in 6000 series
Excellent corrosion resistance
Good machinability
Replaced 6061 in many applications

Applications Highly stressed applications
Bridge construction, cranes, roof trusses
Milk churns
Ore skips

Designation & Standards

Standard	Designation
EN	EN AW-6082 (AlSi1MgMn)
ASTM	B221, B209, B210, B234
ISO	AlSi1MgMn
UNS	A96082
DIN	3. 2315
BS	H30
JIS	A6082

Alu 6082 Chemical Composition (Typical %)

Element	% Composition
Silicon (Si)	0.7 - 1.3
Iron (Fe)	≤ 0.5
Copper (Cu)	≤ 0.1
Manganese (Mn)	0.4 - 1.0
Magnesium (Mg)	0.6 - 1.2
Zinc (Zn)	≤ 0.2
Titanium (Ti)	≤ 0.1
Chromium (Cr)	≤ 0.25
Aluminum (Al)	Remainder

Mechanical Properties (Typical in T6 Temper)

Property	Value
Tensile Strength	290 - 340 MPa
Yield Strength (0.2% offset)	≥ 240 MPa
Elongation (A50mm)	8 - 12%
Brinell Hardness	~95 HB
Modulus of Elasticity	~70 GPa
Density	2.70 g/cm ³
Melting Point	~555 - 650° C

Note: Values vary based on temper (T4, T5, T6, T651) and product form (plate, bar, extrusion).

Available Tempers

- T4 - Solution heat-treated and naturally aged
- T5 - Cooled from hot working and artificially aged
- T6 - Solution heat-treated and artificially aged
- T651 - T6 temper with controlled stress-relieving
- 0 - Annealed (softest form)