



TECHNICAL DATA SHEET

6082 Aluminum

Medium-Strength Heat-Treatable Structural Aluminum Alloy

VTECH
MATERIALS
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Document Control

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Specification	EN AW-6082 / ASTM B221 equivalent / JIS close equivalent	Product Form / UNS	Extrusions, plate, and structural sections / AA6082

Engineering use note: Starter-library values are intended for engineering screening and template standardization. Verify against the latest governing specification, drawing, PO, and MTR before production release.

1. General Description

6082 is a medium-strength heat-treatable structural aluminum alloy included in the VTECH library for quick material screening and template standardization.

2. Chemical Composition (wt%)

Property	Value
Magnesium (Mg)	0.6-1.2
Silicon (Si)	0.7-1.3
Manganese (Mn)	0.4-1.0
Iron (Fe)	<= 0.50
Chromium (Cr)	<= 0.25
Copper (Cu)	<= 0.10
Zinc (Zn)	<= 0.20
Aluminum (Al)	Balance

3. Mechanical Properties

Property	Value
Condition	T6 typical extrusion/plate
Ultimate tensile strength	~290-340 MPa
Yield strength (0.2% offset)	~240-280 MPa
Elongation	~8-12%
Hardness	~89 HB

4. Physical Properties

Property	Value
Density	2.70 g/cm3
Elastic modulus	69 GPa
Thermal conductivity	~180 W/m-K
Melting range	~555-650 C

5. Heat Treatment / Processing

Heat-treatable 6xxx alloy. Solution heat treatment, quench, and artificial aging produce T6 strength levels.

6. Corrosion / Environmental Performance

Good general corrosion resistance and good machinability. Often selected as a higher-strength European structural alternative within the 6xxx family.

7. Key Characteristics

- Heat-treatable structural alloy
- Good machinability and weldability
- Higher strength than 6063 and often 6061 in some forms

8. Typical Applications

- Structural extrusions
- Bridges and trusses
- Machined parts
- Transport frames

9. Standards / Cross-References

- EN AW-6082
- AA6082
- ASTM B221 equivalent