



TECHNICAL DATA SHEET

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MATERIALS LIBRARY

Aluminum 6063-T6

Architectural / Extrusion Aluminum Alloy

Document Control

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Specification	ASTM B221 by product form	Product Form / UNS	Extrusions / UNS A96063

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

6063-T6 is a heat-treatable aluminum alloy optimized for extrudability, surface finish, and corrosion resistance. It is commonly used for architectural shapes, tubing, and general extrusion profiles where appearance and extrusion complexity matter.

2. Chemical Composition (wt%)

Property	Value
Magnesium (Mg)	0.45-0.90
Silicon (Si)	0.20-0.60
Iron (Fe)	<=0.35
Copper (Cu)	<=0.10
Manganese (Mn)	<=0.10
Chromium (Cr)	<=0.10
Zinc (Zn)	<=0.10
Titanium (Ti)	<=0.10
Aluminum (Al)	Balance

3. Mechanical Properties

Property	Value
Condition	T6

Property	Value
Ultimate tensile strength	Approx. 241 MPa
0.2% yield strength	Approx. 214 MPa
Elongation	Approx. 8 %
Hardness	Approx. 73 HB typical

4. Physical Properties

Property	Value
Density	2.70 g/cm ³
Elastic modulus	69 GPa
Thermal conductivity	201 W/m.K
Melting range	615-655 C

5. Heat Treatment / Processing

6063 is a heat-treatable alloy usually supplied as T5 or T6 extrusions. Temper choice depends on required strength, shape complexity, and finishing needs.

6. Corrosion / Environmental Performance

Good corrosion resistance and excellent finishing response, including anodizing, making it a standard extrusion alloy for visible components.

7. Key Characteristics

- Excellent extrudability
- Good surface finish
- Good anodizing response
- Good corrosion resistance

8. Typical Applications

- Architectural extrusions
- Tubing
- Framing systems
- Trim
- Light structural profiles

9. Standards & Equivalents

ASTM B221
UNS A96063
AA 6063

10. Notes & Limitations

6063 is preferred for complex extrusions and appearance-driven parts; 6061 is often preferred where higher structural strength is the main driver.