



TECHNICAL DATA SHEET

3003 Aluminum

Manganese-Alloyed Non-Heat-Treatable Aluminum

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MATERIALS
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Document Control

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Specification	ASTM B209 Alloy 3003 / JIS A3003	Product Form / UNS	Sheet, plate, and general fabrication stock / AA3003

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

3003 is a manganese-alloyed non-heat-treatable aluminum included in the VTECH library for quick material screening and template standardization.

2. Chemical Composition (wt%)

Property	Value
Manganese (Mn)	1.0-1.5
Copper (Cu)	0.05-0.20
Silicon (Si)	<= 0.6
Iron (Fe)	<= 0.7
Zinc (Zn)	<= 0.10
Magnesium (Mg)	<= 0.05
Aluminum (Al)	Balance
Others	Low residuals

3. Mechanical Properties

Property	Value
Condition	O/H14 common sheet tempers
Ultimate tensile strength	~110-180 MPa
Yield strength (0.2% offset)	~40-145 MPa
Elongation	Good, temper dependent
Engineering note	Select temper-specific values for released design

4. Physical Properties

Property	Value
Density	2.73 g/cm3
Elastic modulus	69 GPa
Thermal conductivity	~190 W/m-K
Melting range	~643-654 C

5. Heat Treatment / Processing

Non-heat-treatable alloy. Strength develops through strain hardening tempers.

6. Corrosion / Environmental Performance

Good general corrosion resistance and good brazeability and formability. Often used for general sheet metal work and heat exchangers.

7. Key Characteristics

- Good formability and moderate strength
- Higher strength than 1100
- Common all-purpose sheet alloy

8. Typical Applications

- Heat exchangers
- Cooking utensils
- Storage tanks
- Roofing and siding

9. Standards / Cross-References

ASTM B209 Alloy 3003

JIS A3003

AA3003