ALUMINUM ALLOYS UTILIZED IN OUR EXTRUDED PROFILES

Profall specializes in the production of high-quality aluminum extrusions, using carefully selected alloys to meet the most demanding requirements of our customers.

This document provides an overview of the physical properties of the aluminum alloys we work with — chosen for their excellent mechanical characteristics, corrosion resistance, conductivity, and workability. These materials are ideal for a wide range of industrial, architectural, and technical applications.

Series 1000 – Alloys 1050, 1070

Nearly pure aluminum (≥ 99.5%) — high corrosion resistance, excellent electrical and thermal conductivity and easy to work, though low mechanical strength.

- **Density:** ~2.71 g/cm^3
- **Thermal conductivity:** ~235 W/m·K
- **Electrical conductivity:** ~57% IACS (1050)
- **Tensile strength:** ~60–95 MPa
- **Elongation:** up to 35%

Applications: electrical conductors, chemical/food sector, electronics.

Series 3000 – Alloys 3003, 3103, 3004

Aluminum-manganese alloy — improved strength with high corrosion resistance.

- **Density:** ~2.73 g/cm^3
- **Thermal conductivity:** ~160–200 W/m·K
- **Tensile strength:** ~130–200 MPa
- **Elongation:** 10–30%

Applications: heat exchangers, automotive panels, chemical and food equipment, beverage cans.

Series 6000 – Alloys 6060, 6063, 6005

Silicon-magnesium (Anticorodal®) — heat-treatable, weldable, strong and machinable.

- **Density:** ~2.70 g/cm^3
- **Thermal conductivity:** ~200 W/m·K
- **Tensile strength:** ~150–250 MPa (in T5/T6 temper)
- **Elongation:** 8–15%

Applications: custom extrusions, welded structures, architectural and mechanical components.

GENERAL PHYSICAL PROPERTIES OF ALUMINUM

PROPERTY	VALUE
Melting point	660 °C
Elastic modulus	69 GPa
Thermal expansion coefficient	~23.5 ×10^{-6} /K
Specific strength (series 6000)	~80–100 MPa/(g/cm^3)

NOTES

- Profall employs soft aluminum alloys mainly from the **1000, 3000, and 6000** series to guarantee the best balance of mechanical performance, corrosion resistance, and workability.
- The **6063** alloy is especially common for producing bars and tubes.
- Profall offers **technical support** to help you select the most suitable alloy for your project.

CONTACTS

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