

7075 Aluminum Alloy: Properties

General Characteristics

Characteristic	Appraisal
Strength	High
Corrosion Resistance	Average
Weldability & Brazability	Poor
Workability	Poor
Machinability	Fair

Chemical Composition

Element	Minimum %	Maximum %
Silicon	No Min	0.4
Iron	No Min	0.5
Copper	1.2	2
Manganese	No Min	0.3
Magnesium	2.1	2.9
Chromium	0.18	2
Zinc	5.1	6.1
Titanium	No Min	0.2
Other Elements	No Min	0.05 each, 0.15 in total

Physical Properties

Property	7075-O	7075-T6, -T651	7075-T73, -T7351
Density	2.81 g/cc 0.102 lb/in ³	2.81 g/cc 0.102 lb/in ³	2.81 g/cc 0.102 lb/in ³

Mechanical Properties

Property	7075-O	7075-T6, -T651	7075-T73, -T7351
Tensile Strength	228 MPa 33000 psi	572 MPa 83000 psi	505 MPa 73200 psi
Yield Strength	103 MPa 15000 psi	503 MPa 73000 psi	435 MPa 63100 psi
Modulus of Elasticity	71.7 GPa 10400 ksi	71.7 GPa 10400 ksi	72.0 GPa 10400 ksi

Thermal Properties

Property	7075-O	7075-T6, -T651	7075-T73, -T7351
Coefficient of Thermal Expansion @ 20.0 - 100 °C Temp	23.4 μm/m-°C 13.0 μin/in-°F	23.4 μm/m-°C 13.0 μin/in-°F	23.4 μm/m-°C 13.0 μin/in-°F
Thermal Conductivity	173 W/m-K 1200 BTU-in/hr-ft ² -°F	0.960 J/g-°C 0.229 BTU/lb-°F	155 W/m-K 1080 BTU-in/hr-ft ² -°F