

Aluminium 6082 Properties

Medium-strength [aluminium alloy 6082](#) exhibits high corrosion resistance. Of the alloys in the 6000 class, it possesses the highest strength. Alloy 6082 considered to be a structural alloy. The alloy that is machined the most frequently in plate form is 6082.



Due to its youth as an alloy, the greater strength of In a number of applications, 6082 has taken the place of 6061.

A significant amount of manganese is added, which regulates the grain structure and produces a more durable alloy. Thin-walled, intricate extrusion shapes are challenging to create with alloy 6082.

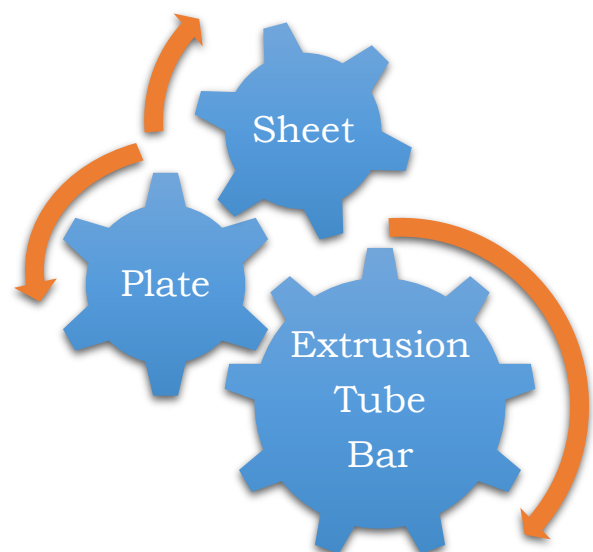
The finished extruded surface is not as smooth as other 6000 series alloys of comparable strength. 6082 machines well and generates tightly wound swarf in the T6 and T651 temper and chip breakers are used.

Application

This material is commonly used in Dairy products, steel beams, cranes, mines, liquor barrels, bridges, highly stressed applications, and transport applications are all made of this material.



Aluminium 6082 Forms:



Grade	6082
UNS	A96082
EN	AW-6082
DIN	AlMgSi1
ISO	Al Si1MgMn
BS (OLD)	HE30
USA	AA6082
WNR	3.2315

Solderability: Good, Weldability - Gas: Good, Weldability - Arc: Good, Weldability - Resistance: Good, Brazability: Good, Workability - Cold: Good, Machinability: Good.

The four most popular tempers for [6082 aluminium](#) are O, which is soft, T4, which is solution heat treated and naturally aged to a substantially stable condition, T6, which is solution heat treated and artificially aged, and T651, which is solution heat treated, stress-relieved by stretching, then artificially ages.

Aluminium 6082 Mechanical Properties

Property

Value

Proof Stress	85 Max MPa
Tensile Strength	150 Max MPa
Elongation	5 – 8%
Shear Strength	210 MPa
Hardness Brinell	40 HB

The material described above has the T6/T651 conditional properties.

Aluminium 6082 Physical Properties

Property

Value

Density	2.70 Kg/m ³
Melting Point	555 °C
Thermal Expansion	24 x 10 ⁻⁶ /K
Modulus of Elasticity	70 GPa
Thermal Conductivity	180 W/m.K
Electrical Resistivity	0.038 x 10 ⁻⁶ Ω .m

For guidance only

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