

6061 T6 Aluminum

Background: The most common grade of aluminum used in Senior Design is 6061 T6. This poster will be a useful resource for designing with this material.

Coding Information

The first number in the code (ie. 6XXX) indicates that 6061 is in the 6000 series of aluminum. The next three numbers are unimportant, designating modifications and alloys within the series. The T6 denotes the temper of the material, in this case it is a solution heat treatment, followed by a quench, followed by an artificial age hardening process.

Mechanical Properties

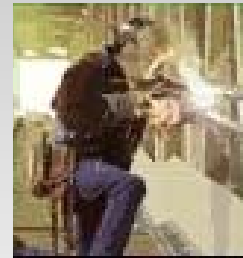
(at room temperature)

Property	Metric	English
Ultimate Tensile Strength	290 MPa	42 ksi
Yield Strength	255 MPa	37 ksi
Modulus of Elasticity	68.9 GPa	10,000 ksi
Shear Strength	186 MPa	27 ksi

If your design is not at room temperature consult www.thermaflo.com/engref_tensile.shtml for temperature specific data

Welding Considerations

6061 T6 is weldable, but when welded the area of the joint will lose all temper and become much weaker than the parent metal. Use caution in your design as the mechanical properties listed above no longer apply after welding.



Machinability

One of the main advantages of using this material is its excellent machinability. Expect machining to be fast, easy and chatter free.



Suppliers

Stock Steel of Spokane PH. 800-572-0516 Usually can deliver next day.
OnlineMetals.com Specializes in small quantities and has extensive sizing listings on their website.