



## Sheet and Plate (5086-H116 or 5083-H116 or Dual)

Several sizes dual certified

The following specifications cover Aluminum 5083

QQ A250/6

### CHEMISTRY DATA

**Aluminum:** Balance  
**Chromium:** 0.05–0.25  
**Copper:** 0.1 max.  
**Iron:** 0.4 max.  
**Magnesium:** 4–4.9  
**Manganese:** 0.4–1  
**Remainder Each:** 0.05 max.  
**Remainder Total:** 0.15 max.  
**Silicon:** 0.4 max.  
**Titanium:** 0.15 max.  
**Zinc:** 0.25 max.

### MECHANICAL DATA

**Form:** Sheet  
**Condition:** H116  
**Temperature:** 68  
**Tensile Strength:** 42  
**Yield Strength:** 30  
**Elongation:** 12

### PHYSICAL DATA

**Density:** 0.096 lb/cu. in.  
**Specific Gravity:** 2.66  
**Melting Point:** 1070 Deg F  
**Poissons Ratio:** 0.33  
**Modulus of Elasticity Tension:** 10.3  
**Modulus of Elasticity Torsion:** 3.8

### Principal Design Features

This is a non-heat treatable alloy for strengthening. It has very good corrosion resistance, is easily welded and does have good strength.

### Applications

Commonly used in the manufacture of unfired, welded pressure vessels, marine, auto aircraft cryogenics, drilling rigs, TV towers, transportation equipment, and in missile components.

### Machinability

No specific data. However the alloy is machinable by conventional means.

### Forming

Forming characteristics are good for either hot or cold working.

### Welding

Weldability of this alloy is very good by conventional means. When filler rod is required it should be the same alloy, 5083.

### Heat Treatment

This is a non-heat treatable alloy.

### Forging

Forging may be done in the range of 850 to 750 °F.

### Hot Working

Hot forming, when sever deformation is required, may be done at 400 °F or higher to 700 °F.

### Cold Working

AL 5083 is readily cold worked by conventional methods. In the annealed (O temper) condition plate of 0.250" thick can be bent on 1.5 T radius.

### Annealing

Annealing may be done at 650 F for sufficient time for thorough heating, followed by air cooling.

### Aging

Not applicable to this alloy.

### Tempering

Not applicable.

### Hardening

Hardening is accomplished by means of cold working only.

### Other Physical Props

Electrical conductivity 28 % of copper.

### Other Mechanical Props

Shear strength in O temper is 25 ksi.

### Aluminum Mill Product Specifications

#### Available Forms:

Sheet and Plate ASTM-B928, FEDERAL-QQ-A-250/7