



## COMPONENT SPECIFICATION SHEET:

### Aluminum Rail Material-6063-T6 P2

November 21, 2011

Fatigue Strength	68.9 MPa	10000 psi	AA; 500,000,000 cycles completely reversed stress; RR Moore machine/specimen
Machinability	50 %	50 %	0-100 Scale of Aluminum Alloys
Shear Modulus	25.8 GPa	3740 ksi	
Shear Strength	152 MPa	22000 psi	AA; Typical

#### Electrical Properties

Electrical Resistivity	3.32e-006 ohm-cm	3.32e-006 ohm-cm	AA; Typical at 68°F
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#### Thermal Properties

CTE, linear 68°F	23.4 $\mu\text{m}/\text{m}\cdot\text{°C}$	13 $\mu\text{in}/\text{in}\cdot\text{°F}$	AA; Typical; Average over 68-212°F range.
CTE, linear 250°C	25.6 $\mu\text{m}/\text{m}\cdot\text{°C}$	14.2 $\mu\text{in}/\text{in}\cdot\text{°F}$	Average over the range 20-300°C
Specific Heat Capacity	0.9 J/g·°C	0.215 BTU/lb·°F	
Thermal Conductivity	200 W/m·K	1390 BTU-in/hr-ft <sup>2</sup> ·°F	AA; Typical at 77°F
Melting Point	616 - 654 °C	1140 - 1210 °F	AA; Typical range based on typical composition for wrought products 1/4 inch thickness or greater
Solidus	616 °C	1140 °F	AA; Typical
Liquidus	654 °C	1210 °F	AA; Typical

#### Processing Properties

Annealing Temperature	413 °C	775 °F	hold at temperature for 2 to 3 hr; cool at 50°F per hour from 775 to 500°F
Solution Temperature	521 °C	970 °F	
Aging Temperature	177 °C	350 °F	hold at temperature for 8 hr