

# Aluminium Alloy

## QQ-A-250 / 11 T651 Plate



### SPECIFICATIONS

|            |      |
|------------|------|
| Commercial | 6061 |
|------------|------|

A medium strength aerospace aluminium alloy with, depending upon temper, Yield Strength of up to 35 ksi (240 MPa) and Tensile Strength of 42 ksi (290 MPa)

### CHEMICAL COMPOSITION

| SAE AMS QQ-A-250/11<br>Alloy QQ A250/11 |             |
|-----------------------------------------|-------------|
| Element                                 | % Present   |
| Magnesium (Mg)                          | 0.8 - 1.2   |
| Silicon (Si)                            | 0.4 - 0.8   |
| Iron (Fe)                               | 0.7 max     |
| Copper (Cu)                             | 0.15 - 0.4  |
| Chromium (Cr)                           | 0.04 - 0.35 |
| Zinc (Zn)                               | 0.25 max    |
| Manganese (Mn)                          | 0.15 max    |
| Titanium (Ti)                           | 0.15 max    |
| Others (Total)                          | 0.15 max    |
| Other (Each)                            | 0.05 max    |
| Aluminium (Al)                          | Balance     |

### ALLOY DESIGNATIONS

Aluminium alloy QQ-A-250/11 has similarities to the following standard designations and specifications **but may not be a direct equivalent:**

Alloy 6061, UNS A96061, ASTM B209, AMS 4026, AMS 4027

### TEMPER TYPES

Alloy QQ-A-250/11 is supplied in a wide range of tempers:

- O - Soft
- T4 - Solution heat treated and naturally aged to a substantially stable condition
- T42 - Solution heat treated and naturally aged to a substantially stable condition
- T451 - Solution heat treated then stress relieved by stretching. Equivalent to T4.
- T6 - Solution heat treated and artificially aged
- T62 - Solution heat treated then artificially aged by the user
- T651 - Solution heat treated, stress relieved by stretching then artificially aged

### SUPPLIED FORMS

Alloy QQ-A-250/11 T651 is supplied in plate and sheet

- Plate
- Sheet

### GENERIC PHYSICAL PROPERTIES

| Property               | Value                       |
|------------------------|-----------------------------|
| Density                | 2.7 g/cm <sup>3</sup>       |
| Melting Point          | 650 °C                      |
| Thermal Expansion      | 23.4 x10 <sup>-6</sup> /K   |
| Modulus of Elasticity  | 70 GPa                      |
| Thermal Conductivity   | 166 W/m.K                   |
| Electrical Resistivity | 0.04 x10 <sup>-6</sup> Ω .m |

'Typical' Physical Properties are shown

### MECHANICAL PROPERTIES

The Mechanical Properties give are for T651 Plate.

| Thickness (mm)                | Proof strength (Min) | Tensile Strength (Min) | Elongation % (Min) |
|-------------------------------|----------------------|------------------------|--------------------|
| Over 6.3 up to & incl. 12.6   | 241                  | 290                    | 10                 |
| 12.7 up to & incl. 25.4       | 241                  | 290                    | 9                  |
| Over 25.4 up to & incl. 50.8  | 241                  | 290                    | 8                  |
| Over 50.8 up to & incl. 76.2  | 241                  | 290                    | 6                  |
| Over 76.2 up to & incl. 101.6 | 241                  | 290                    | 6                  |

## CONTACT

|          |                                                                                               |
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## REVISION HISTORY

|                   |                 |
|-------------------|-----------------|
| Datasheet Updated | 17 January 2014 |
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