

### SPECIFICATIONS

|            |      |
|------------|------|
| Commercial | 3103 |
|------------|------|

#### Applications:

Equipment for heating and cooling: heat exchangers, air condition evaporators, motor vehicle radiators, freezer linings, office equipment. Tubing, piping, containers, closures. Cladding alloy. Pressure vessels, aircraft and military components.

#### Characteristic Properties:

Very good resistance to atmospheric corrosion. Very good weldability. Good formability by pressing, drawing and roll forming. Medium strength alloy. Better mechanical properties (in particular at elevated temperatures) than 1xxx-alloys. Properties very close to those of 3003.

#### Precautions and Warnings:

Actual performance requires careful design of tools, lubrication and metal surface condition.

### CHEMICAL COMPOSITION

| BS 4L60(1985)<br>Alloy 4L60  |           |
|------------------------------|-----------|
| Element                      | % Present |
| Manganese (Mn)               | 0.9 - 1.5 |
| Iron (Fe)                    | 0.7 max   |
| Silicon (Si)                 | 0.5 max   |
| Magnesium (Mg)               | 0.3 max   |
| Zinc (Zn)                    | 0.2 max   |
| Others (Total)               | 0.15 max  |
| Copper (Cu)                  | 0.1 max   |
| Chromium (Cr)                | 0.1 max   |
| Titanium + Zirconium (Ti+Zr) | 0.1 max   |
| Other (Each)                 | 0.05 max  |
| Aluminium (Al)               | Balance   |

The material shall be supplied cold rolled (H12) or cold rolled and partially annealed (H22).

### ALLOY DESIGNATIONS

Aluminium alloy 4L60 - 3103 is covered by standard BS EN 4L60 (1985)

### TEMPER TYPES

The most common tempers for 4L60 - 3103 aluminium are:

- H12 - Work hardened by rolling to quarter hard, not annealed after rolling
- H22 - Work hardened by rolling then annealed to quarter hard

### SUPPLIED FORMS

4L60 - 3103 aluminium is supplied in the following forms:

- Sheet
- Strip

### GENERIC PHYSICAL PROPERTIES

| Property               | Value                     |
|------------------------|---------------------------|
| Density                | 2.73 g/cm <sup>3</sup>    |
| Melting Point          | 655 °C                    |
| Thermal Expansion      | 23.1 x10 <sup>-6</sup> /K |
| Modulus of Elasticity  | 69.5 GPa                  |
| Thermal Conductivity   | 160 W/m.K                 |
| Electrical Resistivity | 42 % IACS                 |

### MECHANICAL PROPERTIES

| BS 4L60(1985)<br>Sheet<br>0.4mm to 0.8mm |                                     |
|------------------------------------------|-------------------------------------|
| Property                                 | Value                               |
| Elongation A50 mm                        | 5 Min %                             |
| Tensile Strength                         | 120 Min - 145 Max N/mm <sup>2</sup> |

Mechanical properties relate to material with a nominal thickness of 0.4mm up to and including 0.8mm. The specification contains other values for different material thicknesses.

## CONTACT

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## REVISION HISTORY

|                   |                 |
|-------------------|-----------------|
| Datasheet Updated | 09 January 2014 |
|-------------------|-----------------|

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