

# 6082 Aluminium Plate

Smiths Advanced Metals

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## Highest strength 6000 series alloy

A structural aluminium plate product for high strength applications

6082 is a medium-strength aluminium that combines good corrosion resistance, workability and anodising properties.

In aluminium terms, 6082 is relatively new and has effectively replaced 6061 aluminium in many applications. The alloy is typically used for machining in plate form and is commonly referred to as a structural alloy. Typical use includes high-stress applications such as cranes and bridges.

Weldability of 6082 is generally good though overall strength around the welding zone is reduced. Machinability is good, particularly T6 and T651 tempers, where the use of a chip breaker is recommended, which results in tight swarf coils.

We stock [6082 aluminium plates](#) in a wide range of sizes and tempers, including T6 and T651 tempers.



## Grades / Specifications

- BS L115, BS L100
- EN4202
- BS EN 573, BS EN 485
- H30TF

## Processing

We process aluminium plates in-house to tight tolerances using vertical and CNC saws. Metallurgical support is also available via our [UKAS Accredited Testing Laboratory](#).

## Key Applications

- Structural applications
- Cranes
- Highly stressed components

## Benefits

- Excellent corrosion resistance
- Good machinability and weldability
- Highest strength of all the 6xxx series

### Chemical Composition (weight %)

|      | Si   | Fe   | Cu   | Mn   | Mg   | Cr   | Zn   | Ti   | Others (ea) | Others (total) | Al  |
|------|------|------|------|------|------|------|------|------|-------------|----------------|-----|
| min. | 0.70 |      |      | 0.40 | 0.60 |      |      |      |             |                | Rem |
| max. | 1.30 | 0.50 | 0.10 | 1.00 | 1.20 | 0.25 | 0.20 | 0.10 | 0.05        | 0.15           |     |

### Mechanical Properties (min. values, 100 to 150mm thick plate)

| Temper | MPa R <sub>m</sub> | MPa R <sub>p0.2</sub> | Elongation A (%) | Hardness HBW Typical |
|--------|--------------------|-----------------------|------------------|----------------------|
| T6     | 275                | 240                   | 6                | 84                   |
| T651   | 275                | 240                   | 6                | 84                   |

Properties as per BS EN 485-2

### Physical Properties

|  |           |
|--|-----------|
| Temper   | T6        |
| Density g/cm <sup>3</sup>                                | 2.70      |
| Melting Range °C   | 575 - 650 |
| Thermal Conductivity (% IACS)                            | 43.7      |
| Electrical Conductivity (% IACS)                         | 44        |
| Modulus of Elasticity x10 <sup>3</sup> N/mm <sup>2</sup> | 70        |

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