



Aluminium Alloy - L103 T4

SPECIFICATIONS

| | |
|------------|------------------|
| Commercial | 2014A - Obsolete |
|------------|------------------|

Applications:

High strength structural components: aircraft (e.g. fittings and wheels), military vehicles and bridges, forgings for trucks and machinery (hydraulic etc.). Weapons manufacture, structural applications.

Characteristics:

Heat treatable alloy. High mechanical strength slightly higher than 2011 and 2017A.

CHEMICAL COMPOSITION

| BS L103(1971) Alloy L103 | |
|------------------------------|-----------|
| Element | % Present |
| Copper (Cu) | 3.9 - 5 |
| Manganese (Mn) | 0.4 - 1.2 |
| Silicon (Si) | 0.5 - 0.9 |
| Magnesium (Mg) | 0.2 - 0.8 |
| Iron (Fe) | 0.5 max |
| Titanium + Zirconium (Ti+Zr) | 0.2 max |
| Zinc (Zn) | 0.2 max |
| Nickel (Ni) | 0.2 max |
| Chromium (Cr) | 0.1 max |
| Tin (Sn) | 0.05 max |
| Lead (Pb) | 0.05 max |
| Aluminium (Al) | Balance |

Forging stock shall be supplied non heat treated.

Forgings shall be supplied solution treated and aged at room temperature.

Heat treatment shall be as follows:

1. Solution treat by heating at a temperature of 500 +/- 5C and quenching in water at a temperature not less than 40C nor more than 70C.
2. Age at room temperature for not less than 48 hours.

ALLOY DESIGNATIONS

Aluminium alloy L103 - 2014A is covered by Standard BS EN 2100 and has similarities to the following standard designations and specifications **but may not be a direct equivalent:**

2014 / 2014A AMS 4121

TEMPER TYPES

The most common temper for L103 - 2014A aluminium forging stock is T4

- T4 - Solution heat treated and naturally aged to a substantially stable condition
- T6 - Solution heat treated and artificially aged

SUPPLIED FORMS

L103-2014A aluminium is supplied as forging stock and forgings made from cast billet, extruded sections or rolled plate

- Forgings
- Bar
- Castings
- Extrusions
- Plate

GENERIC PHYSICAL PROPERTIES

| Property | Value |
|-----------------------|---------------------------|
| Density | 2.8 g/cm ³ |
| Melting Point | 640 °C |
| Thermal Expansion | 22.8 x10 ⁻⁶ /K |
| Modulus of Elasticity | 73 GPa |
| Thermal Conductivity | 134 - 135 W/m.K |



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MECHANICAL PROPERTIES

| BS L103(1971) | |
|-------------------|-----------------------|
| Property | Value |
| Hardness Brinell | 104 HB |
| Tensile Strength | 370 N/mm ² |
| Elongation A | 14 % |
| 0.2% Proof Stress | 225 N/mm ² |

The values shown in the mechanical properties table apply to a test sample prepared by forging representing extruded forging stock and forgings made from cast billets, hot rolled plate and extruded stock. The specification contains other properties for test samples prepared by machining representing extruded forging stock and forgings made from extruded stock.

The hardness values apply to forgings and forged test pieces.

CONTACT

Address: Wilsons Ltd
Nordic House
Old Great North Road
Huntingdon
PE28 5XN

Tel: +44 (0)1480 456421

Email: sales@wilsonsmetals.com

Web: www.wilsonsmetals.com

REVISION HISTORY

Datasheet Updated 09 January 2014

DISCLAIMER

This Data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon.

Please note that the 'Datasheet Update' date shown above is no guarantee of accuracy or whether the datasheet is up to date.

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