Aluminium Alloy - 4015 - H14 Sheet

SPECIFICATIONS

Commercial	4015
EN	4015

Aluminium alloy 4015 is a high quality general purpose alloy featuring good ductility coupled with mechanical strength. A close relation to 3103 AlMn alloy, but with higher Silicon content, this alloy can be welded, anodized* or painted. It should be noted that the anodized finish of alloy 4015 will be much darker and less reflective that on alloys 1050 or 3103 so this is not recommended for decorative applications. Many users now prefer to use alloy 4015 having switched from other alloys such as 1050 and 3103.
The corrosion resistance of alloy 4015 is similar to the 3000 series alloys. Suitable for most applications in mill finish or painted, it is not recommended for use in aggressive environments.

* It should be noted that the anodized finish on alloy 4015 will be much darker and less reflective that on alloys 1050 or 3103 so this is not recommended for decorative applications.

Please note that the mechanicla properties quoted are for H14 temper

CHEMICAL COMPOSITION

BS EN 573-3:2009
Alloy 4015

Element	% Present
Silicon (Si)	1.4 - 2.2
Manganese (Mn)	0.6 - 1.2
Iron (Fe)	0.7 max
Magnesium (Mg)	0.1 - 0.5
Copper (Cu)	0.2 max
Zinc (Zn)	0.2 max
Others (Total)	0.15 max
Other (Each)	0.05 max
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

TEMPER TYPES

The most common tempers for 4015 aluminium are:
- H14 - Work hardened by rolling to half hard, not annealed after rolling
- H16 - Work hardened by rolling to three-quarter hard, not annealed after rolling
- H12 - Work hardened by rolling to quarter hard, not annealed after rolling
- H18 - Work hardened by rolling to fully hard, not annealed after rolling

SUPPLIED FORMS

Alloy 4015 is only available as sheet
- Sheet

GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.72 g/cm³
Thermal Expansion	24 x10^{-6} /K
Melting Point	600 °C
Modulus of Elasticity	70 GPa
Thermal Conductivity	150-200 W/m.K
Electrical Resistivity	0.023-0.029 x10^{-6} Ω .m

MECHANICAL PROPERTIES

BS EN 485-2:2008
Sheet
0.2mm to 3.00mm

Property	Value
Proof Stress	120 Min MPa
Tensile Strength	150 - 200 MPa
Hardness Brinell	50 HB

The properties above are for material in the H14 condition

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WELDABILITY

Suitable for MIG and TIG welding using normal aluminium welding conditions Recommended welding wire is 4043 (Al Si5)

FABRICATION

Corresponds to alloy 3103 in same temper but may not be a direct equivalent:
Workability – Cold: Very Good
Machinability: Acceptable
Weldability – Gas: Very Good
Weldability – Arc: Very Good
Weldability – Resistance: Good
Brazability: Very Good
Solderability: Very Good

r/t performance dependent upon thickness – Approx figures for H12 r/t min bend radius for 180 degree bend **are shown below**
Thickness
0.5-0.8mm: r/t 0.0
0.8-1.5mm: r/t 1.0
1.5-3.0mm: r/t 2.0

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REVISION HISTORY

Datasheet Updated	13 November 2018

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.

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