

# Aluminium – Alloy 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 than 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 than on alloys 1050 or 3103 so this is not recommended for decorative applications.*

## Chemical Composition

Si	1.4 to 2.2%
Fe	0.7%
Cu	0.2%
Mn	0.6 to 1.2%
Mg	0.10 to 0.50%
Zn	0.2%

## Mechanical Properties

Temper	Rp0.2% MPa	UTS MPa	A Min %
0	45 Min	110-150	20
H12	110 Min	135-175	4
H14	135 Min	160-200	3
H16	155 Min	185-225	2
H18	180 Min	210-250	2

## Physical Properties

Density	2.72 g mm <sup>-3</sup>
Melting Point	600°C
Modulus of Elasticity	Approx 70 GPa
Electrical Resistivity	23-29x10 <sup>8</sup> Ωm
Thermal Conductivity	150-200 W/mK
Thermal Expansion	24x10 <sup>-6</sup> /K

## Formability

Equivalent to alloy 3103 in same temper. r/t performance dependent upon thickness – Approx figures for H12 are shown below

Thickness mm	r/t min bend radius for 180° bend
0.5-0.8	0.0
0.8-1.5	1.0
1.5-3.0	2.0

## Drawability

Typical properties for 0.8mm thick sheet

Temper	r/t	r value <sup>1</sup>	Erichsen Value <sup>2</sup> (mm)
0	45 Min	110-150	20
H12	110 Min	135-175	4
H14	135 Min	160-200	3
H16	155 Min	185-225	2
H18	180 Min	210-250	2

<sup>1</sup> An indication of drawability

<sup>2</sup> An indication of limit of biaxial stretching

## Welding

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

Typical welding conditions are shown below

Parameter	MIG	TIG
Current	120A	150A
Voltage	20V	14V
Travel Speed	0.65m/min	0.22m/min
Wire Feed rate	5.2m/min	-
Gas Flow Rate	25l/min	9l/min

All Data is indicative only and must not be seen as a substitute for the full specification from which it is drawn. In particular, the mechanical property requirements vary widely with temper, product form and product dimensions. For more complete details please refer to the relevant specification – The BS EN Specifications for aluminium are listed on a separate Datasheet.

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